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ABSTRACT

Designed as a management tool for governing boards and administrators to promote the development and improvement of vocational education opportunities in Maricopa County, this report presents an update of a 5-year (1984-89) vocational education plan for secondary and postsecondary education. Section I provides an introduction to the report and to vocational education planning in the county. In addition, planning assumptions concerning technological, financial, political, demographic, and economic trends are discussed; new goals for 1987 are presented; and the members of the Maricopa County Vocational Education Planning Council are listed. Section II presents an update on progress made in the areas of articulation between high schools and two-year colleges and two-year and four-year colleges; opportunities for coordination between public and private schools; labor market demand and program priorities; and the financing of occupational programs. After section III identifies goals and objectives for 1987-88 related to the same four areas, section IV presents recommendations that address statewide issues of funding and legislation. Appendices include an inventory of training programs in the county, and economic and employment data and forecasts. (LAL)

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MARICOPA COUNTY VOCATIONAL EDUCATION PLAN

1987 UPDATE

Prepared by:

The Maricopa County Vocational Education Planning Council

November 1986

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FOREWARD

The Maricopa County Vocational Education Plan 1987 Update is the third update of the five year Maricopa Plan adopted for 1984-89. The plan is a management tool for Governing Boards and administrators to promote the development and improvement of vocational education opportunities.

The Maricopa Community College District greatly appreciates the dedicated participation of the Maricopa County Vocational Education Planning Council members. These high school and college administrators and representatives of business/industry, private schools, governmental agencies, and universities have been responsible for both developing and implementing the plan objectives. Special thanks are also due to faculty and staff members who contributed many hours of work while implementing portions of the plan.

Comments on this plan may be addressed to:

Bertha A. Landrum
District Director of Occupational Education

Maricopa Community Colleges
3910 E. Washington Street
Phoenix, Arizona 85034
(602)267-4315

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I. INTRODUCTION

The Arizona Vocational Education Act of 1982 (Senate Bill 1106) requires community college districts to coordinate the vocational education planning process for county planning areas. The legislation directs the planning effort to focus on:

1. labor market needs
2. analysis of possible program duplication
3. guidelines for the interface of secondary and postsecondary programs
4. cooperative programming among the providers of vocational education and employment training, and
5. priorities for operational and capital funding with methods to meet the funding needs.

The Maricopa County Vocational Education Plan 1987 Update is the third annual update of the five year Maricopa Plan adopted for 1984-89. This document includes an update of progress made on several planning issues and establishes objectives for 1987. The legislation described this plan as a "management tool" for secondary and postsecondary training providers. The plan provides a framework for improvement of vocational education opportunities and cooperative programming. It does not, however, supercede the plans of local educational and training institutions.

During the 1986 planning process, the Maricopa County Planning Council developed planning assumptions in the following areas:

Technological Trends	Demographic Trends
Financing Trends	Economic Trends
Political Trends	

These planning assumptions were used to develop three new goals for 1987. Objectives for these new goals will be developed during the 1987 planning cycle.

A. PLANNING ASSUMPTIONS FOR 1987

Technological Trends

Technological innovations will continue in the telecommunications, robotics, lasers, information processing, fiber optics, biomedical and biochemical fields. The computer will continue to be important and will impact nearly all aspects of our personal and work lives. The rate of technological development will largely be driven by marketplace economics. The levels of technological innovations will be on the increase with new products or products with software enhancements coming to market in shorter and shorter periods of time.

To keep up with the technological changes in the workplace, more people will need computer usage training. Those lacking computer literacy skills are likely to be relegated to lower paying jobs. Job tasks will also continue to be impacted by technological advances. This will result, in many cases, in the replacement of intermediate level tasks by less skilled or unskilled tasks. Training will still be needed for the higher level skills.

The computer will continue to be an effective tool for making more efficient use of time, accelerating the learning process, and removing the drudgery involved in learning or performing some tasks.

Financing Trends

With an increasing rate of technological development, educational institutions will have difficulty keeping up with computer, software, science support, and laboratory equipment purchases. Effects of national legislation, such as Gramm-Rudman, etc., will reduce the federal resources and put more financial pressure on the state and localities.

Other sources will need to be located to assist in providing technical support to education. There are some indications that corporations are increasingly willing to buy training at the postsecondary level.

More corporations are showing a desire to form partnerships or make collaborative efforts to improve vocational training and are more willing to provide goods or services to improve programs.

Political Trends

As the population ages, older citizens will exert more political influence. Since their children are no longer as involved in public education, there will be a tendency for these older voters to vote against educational referenda that may impact their local taxes.

As the federal government continues to withdraw from involvement in education, financially and philosophically, state government will increasingly exercise greater control and direction over public education. This is occurring in Arizona at a time when change in state leadership is taking place. Thus the philosophical direction for vocational education is currently unknown. A short period of uncertainty in state leadership can be expected.

Nationally, there is a trend in local politics for candidates for city councils, school board members, etc., to be single issue candidates. Simultaneously, these are persons in a position to devote nearly full-time to their elected positions.

Demographic Trends

Maricopa County will continue to grow rapidly in terms of population and jobs. With births and inmigration, the population will continue to increase by over 75,000 persons each year. While the county last year experienced the fastest rate of job growth in the nation, the job growth rate may not be able to keep up with population growth. The growth rate will not be even throughout the county, creating enrollment decline in some school districts and growth in others.

The number of single parent families headed by women is increasing. This increase is due not only to divorce or separations, but also to teenagers bearing children. This increase in teenage pregnancies is seen most dramatically in minority populations. Sixty percent of all children will live in a single parent household sometime before their 18th birthday.

Persons not possessing identifiable job skills or high school diplomas will be at great disadvantage for employment in a job market that has specific requirements to get and hold a job. Unskilled persons in this country will be in competition with unskilled workers in other countries for employment because manufacturers tend to move their operations to areas with low labor costs.

Those who drop out of school prematurely will be particularly ill-prepared to compete in the future labor market. Unfortunately, the school dropout rate is increasing both locally and nationally. Increased graduation requirements, economics, failure to acquire basic skills, teenage pregnancies, and dissatisfaction with the system contribute to this problem.

Many of these demographic and social trends will have significant economic consequences for public schools and for society in general. Single parent families, pregnant teenagers, and unemployed school dropouts tend to be consumers rather than contributors to public monies because of their low incomes and need for social services.

Economic Trends

Maricopa County will continue to experience economic growth. Although growth will not be at the breakneck pace of 1984 and 1985, there will be more than 125,000 additional jobs in the county by 1988. The economic sectors projected to have the highest economic growth between 1987 and 1991 are shown on the following table. Mining, communication and utilities, food processing manufacturing and agriculture are expected to lose employment.

Industry	Maricopa County Projected Employment Growth 1987-91	Rank
Other Services [1]	23,433	1
Eating and Drinking Places	18,561	2
Business Services	16,962	3
Wholesale Trade	13,482	4
Electrical Machinery Manufacturing	11,338	5
Special Trades-Construction	11,264	6
Other Retail Trade [2]	10,515	7
Health Services	10,227	8
Finance and Insurance	9,672	9
Schools, Colleges, and Universities	7,481	10
State and Local Government	6,922	11
Transportation incl. R.R.	5,905	12
Food Stores	5,986	13
Other Durable Goods Manufacturing [3]	5,372	14
Department and Apparel Stores	5,348	15
General Contractors-Construction	5,200	16

Patterns of income distribution are changing. Larger numbers of families have two wage earners, making for higher total family incomes. However, the increasing number of families headed by single parents (usually women) often have quite low or even poverty level wages.

B. NEW GOALS FOR 1987

1. Develop strategies to increase student retention and ensure that more students leave high school with marketable skills.

2. Seek opportunities to form industry/education partnerships or collaborative efforts to improve vocational training and help the nation compete economically in the international market.

3. Influence educational policies to ensure that the educational system contains a balance between academic and occupational education resources.

[1]Other Services - all services except hotels and motels, business services, and health services

[2]Other Retail Trade - all retail trade except eating and drinking places, food stores, department and apparel stores, and automotive trade

[3]Other Durable Goods Manufacturing - all durable goods manufacturing except aircraft and missles, lumber and wood products, stone, clay, glass, primary and fabricated metals and machinery

C. **PLANNING COUNCIL MEMBERSHIP**

MARICOPA COUNTY VOCATIONAL EDUCATION PLANNING COUNCIL
MEMBERSHIP LISTING
(*Steering Committee)

*Mr. Harold Alfred, Wickenburg High School
Tom Beauchamp, AZ Business-Industry Education Council
*Alex Belous, Cave Creek Schools
Andy Bernal, Chandler-Gilbert Education Center
*Walter F.L. Brown, Gila Bend Unified School District
*David Curd, Chandler Unified District
*Mary Day, Maricopa Community Colleges
Mickey Dingott, Motorola, Inc.
*George Dunn, Metro Tech
*Carol Erickson, Scottsdale Unified School District
*Ken Frison, Paradise Valley Unified School District
Richard Froese, State Council on Vocational Education
Phil Gagle, Arizona Private School Association
Fred Gaudet, Maricopa Technical Community College
*Duane Given, Agua Fria Union High School District
John W. Glenn, Northern Arizona University
Robert D. Hartman, Arizona Private School Association
*Carolyn Hawkins, Gilbert Unified School District
*Robert Jones, Mesa Public Schools
*William L. Jones, Dysart Unified School District
*Marilyn Keller, Tolleson Union High School District
Robert V. Kerwood, Northern Arizona University
Gay Conrad Kruglick, Earl's Academy of Beauty
*Bertha Landrum, Chairperson, Maricopa Community Colleges
*Owen Layton, Deer Valley Unified District
Carol LeBlanc, Statewide Occupational Planning
Albert L. Lindstrom, Jr., U.S. Department of Labor
David Lopez, Maricopa County Human Resources Dept.
*Daniel W. Mangelsdorf, Peoria Unified District
Sue Meikle, Arizona Department of Education
John Messer, Scottsdale Community College
Bob Moore, Agri-Business Council of Arizona, Inc.
*Hank Newberry, Buckeye Union High School District
*Jean Paisley, Tempe Union High School District
Zenas A. Prust, Division of Technology, Arizona State University
Phil Randolph, Glendale Community College
Louis Salebra, Maricopa County Skill Center
Ken Schultz, Mesa Community College
Ron Simon, Arizona Department of Economic Security - Research Adm.
Terry Trost, Phoenix Metro Chamber of Commerce
Harry Vesely, Phoenix College
*Kathy Vogt, Glendale Union High School District #205
Ron Walker, Arizona Public Service Co.
Fred J. Work, Arizona Carpenters' J.A.T.C.
Steve Young, Employment & Training Division - City of Phoenix

II. PROGRESS REPORT

Significant progress was made during the last year in implementing the planning group's 1986 objectives. Undoubtedly, the greatest strides were made in articulating programs between high schools and community colleges and between community colleges and universities. The articulation efforts have ranged from achieving transferability between educational levels to coordinating and sharing resources. As the process evolved, we have learned that articulation can take many forms.

This progress report will provide an update of progress made on several issues:

A. Articulation

B. Opportunities for Coordination between Public and Private Schools

C. Labor Market Demand and Program Priorities

D. Financing of Occupational Programs

A. ARTICULATION

Articulation is the coordination of programs so that students can progress without duplication of time, effort, or expense to themselves or taxpayers. The planning group's 1986 objectives called for identifying additional opportunities for sharing resources, establishing a clearinghouse and procedures to facilitate articulation, and conducting articulation projects between secondary and postsecondary institutions.

1. The Maricopa County Community College District employed several articulation specialists to facilitate articulation efforts between secondary schools and community colleges countywide and between community colleges and universities statewide. These individuals developed processes and guidelines to facilitate aritculation and have served as clearinghouses for information related to articulation. Deer Valley Unified School District also employed a specialist to develop and coordinate articulation.

2. The Scottsdale Unified School District is proposing to jointly build and develop a vocational technical center with the Maricopa County Community College District on the Scottsdale Community College campus. The proposed site is attractive to the school district because the site is centrally located, would enhance the image of vocational education in the college-oriented community and is cost-effective. This proposal may also result in increased enrollments for Scottsdale Community College. Legislation passed in 1986 (HB 2214) now allows school districts and community college districts to jointly own and operate vocational and technical centers.

3. Mesa Public Schools and Mesa Community College developed a cost-benefit comparison for their FY86 Intergovernmental Agreement(IGA). The IGA provided for the sharing and joint use of vocational education programs without the exchange of funds. A comparison of 1985-86 costs for each institution showed that their costs were very close; the difference between them was only 3%($371).

4. Deer Valley Unified School District is piloting a computerized placement system operated by the Maricopa Community Colleges. Deer Valley High School and Vocational Technical Education Center are sharing Glendale Community College's access to the district-wide placement system to find employment opportunities for their students and recent graduates.

5. Considerable progress has been made in articulating programs. A total of 172 high school-community college articulation agreements are now in effect in Maricopa County. Most of these (88%) grant college credit for mastery of competencies which comprise an equivalent college course. In addition, Maricopa County has 12 agreements to share facilities, equipment, and/or instructors. Program articulation agreements have also been negotiated between the Maricopa Community Colleges, Arizona State University, and Northern Arizona University.

6. The U.S. Department of Labor's Bureau of Apprenticeship and Training(BAT), Deer Valley School District, and Rio Salado Community College are partners in an apprenticeship articulation project. The purpose of the project is to link vocational education training to apprenticeship training. High school students (usually seniors) take skills training at the Vo-Tech Center for half of the school day and then go out to work for an employer as an Industrial Cooperative Education participant. The training provided by the employer meets apprenticeship standards. Deer Valley Carpentry students also receive credit from the Carpenter's Apprenticeship Program and Rio Salado for performance that meets the standards of the apprenticeship program. Rio Salado grants college credit for mastery of the competencies which comprise an equivalent college course.

The Maricopa County Articulation Agreements have been classified into five categories.

a. Contracting
b. Course Credit
c. Occupational Credential Acceptance
d. Resource Coordination
e. Joint Program Development

Items within these categories are primarily arranged in alphabetical order by college name since community colleges generally articulate with high schools in their respective service areas.

a. **Contracting**: Purchase of education and training that would not otherwise be available.

- **Maricopa Skill Center** provides vocational training for the occupations of Electronics Fabricator, Machinist, Meat Cutter, and Welding to students from **Marcos de Niza** and **Tempe High Schools.** Maricopa Skill Center also contracts to provide vocational training for high risk **Phoenix Union High School District** students from the **Bostrom** and **Desirata Alternative High Schools.**

- **Deer Valley High School District, Gilbert High School District, Glendale Union High School District, Mesa Public Schools, Phoenix Union High School District, Peoria Unified School District** and **Scottsdale Unified District** contract with proprietary schools to make training available for the occupation of Cosmetologist.

b. **Course Credit:** Granting of college credit for mastery of the competencies which comprise an equivalent college course.

- **High School - Community College Articulation**

Glendale Community College

High School District	College Courses	Credits
Deer Valley	ADA 114-Graphics Printing Processes	3
Deer Valley	ADA 214-Graphics Camera Techniques	3
Deer Valley	ART 181-Graphic Design I	3
Deer Valley	AUT 114AA-Diesel Engine Theory	3
Deer Valley	AUT 214-Passenger Car & Light Truck Diesel	3
Deer Valley	DFT 204-Computer Aided Drafting	3
Deer Valley	ELT 101-Mathematics for Electronics	3
Deer Valley	ELT 103-Introduction to Electronics	4
Deer Valley	FON 141-Nutrition	3
Deer Valley	GTC 203-Machine Tools	3
Deer Valley	MET 101-Machine Shop Theory I	3
Deer Valley	OAS 102-Typing II	3
Deer Valley	OAS 109-Shorthand I	3
Deer Valley	OAS 209-Shorthand III	3
Deer Valley	WLD 101-Welding I	3
Deer Valley	WLD 201-Welding II	3

Maricopa Technical Community College

High School District	College Course	Credit
Mesa	ADA 102-Advertising Production Methods	3
Paradise Valley	ADA 102-Advertising Production Methods	3
Scottsdale	BPC 130-Microcomputer Word Processing	1
Scottsdale	CIS 105-Survey of Data Processing	3
Scottsdale	CIS 116-Business Basic	3
Phoenix Union	DFT 121-Technical Drafting I	3
Scottsdale	DFT 121-Technical Drafting I	3
Phoenix Union	DFT 122-Technical Drafting II	3
Scottsdale	DFT 122-Technical Drafting II	3
Deer Valley	HLR 221-Cardiopulmonary Resuscitation	1
Mesa	HLR 221-Cardiopulmonary Resuscitation	1
Paradise Valley	HLR 221-Cardiopulmonary Resuscitation	1
Peoria	HLR 221-Cardiopulmonary Resuscitation	1
Phoenix Union	HLR 221-Cardiopulmonary Resuscitation	1
Scottsdale	HLR 221-Cardiopulmonary Resuscitation	1
Deer Valley	HVA 111-Principles of Air Conditioning Systems	4
Mesa	HVA 111 Principles of Air Conditioning Systems	4
Mesa	HVA 122-Electrical Circuitry & Controls	4
Deer Valley	NUR 101AA-Fundamentals of Nursing	5.5
Mesa	NUR 101AA-Fundamentals of Nursing	5.5
Peoria	NUR 101AA-Fundamentals of Nursing	5.5
Phoenix Union	NUR 101AA-Fundamentals of Nursing	5.5
Tolleson	NUR 101AA-Fundamentals of Nursing	5.5
Deer Valley	NUR 118-Psychiatric Nursing I	1
Peoria	NUR 118-Psychiatric Nursing I	1
Phoenix Union	NUR 118-Psychiatric Nursing I	1
Tolleson	NUR 118-Psychiatric Nursing I	1
Mesa	NUR 118-Psychiatric Nursing I	1
Scottsdale	OAS 130-Microcomputer Word Processing	1
Deer Valley	RES 100-Respiratory Care Fundamentals I	Variable
Mesa	RES 100-Respiratory Care Fundamentals I	Variable
Peoria	RES 100-Respiratory Care Fundamentals I	Variable
Phoenix Union	RES 100-Respiratory Care Fundamentals I	Variable
Scottsdale	RES 100-Respiratory Care Fundamentals I	Variable
Mesa	WLD 105-Gas Welding	5
Paradise Valley	WLD 105-Gas Welding	5
Phoenix Union	WLD 105-Gas Welding	5
Scottsdale	WLD 105-Gas Welding	5
Mesa	WLD 106-Arc Welding	5
Paradise Valley	WLD 106-Arc Welding	5
Phoenix Union	WLD 106-Arc Welding	5
Scottsdale	WLD 106-Arc Welding	5

Mesa Community College

High School District	College Courses	Credits
Mesa	AGS 164-Plant Science	3
Mesa	ANS 110-Introduction to Animal Science	3
Mesa	AUT 101-Internal Combustion Engines Theory	3
Mesa	AUT 102-Automotive Chassis Theory	3
Mesa	CFS 176-Child Development	3
Mesa	CFS 201-Participation in Child Care & Nursery	4
Mesa	CFS 212-Creative Activities for the Young Child	3
Mesa	CIS 105-Survey of Data Processing	3
Mesa	CIS 116-Business Basic	3
Mesa	CIS 158-COBOL I	3
Mesa	DFT 100-Introduction to Drafting	3
Mesa	DFT 109-Introduction to Electro-Mech'l Drafting	3
Mesa	DFT 121-Technical Drafting I	3
Mesa	DFT 127-Construction Drafting I	3
Mesa	GTC 101-Machine Shop Theory I	3
Scottsdale	GTC 101-Machine Shop Theory I	3
Mesa	GTC 203-Machine Tools	3
Scottsdale	GTC 203-Machine Tools	3
Mesa	MET 150-Machining Practices I	8
Scottsdale	MET 150-Machining Practices I	8
Tempe	OAS 261-Word Processing Applications I	3
Mesa	OAS 250-Word Processing Concepts I	3
Mesa	OAS 261-Word Processing Applications I	3
Mesa	WLD 101-Welding I	3
Mesa	WLD 201-Welding II	3

Phoenix College

High School Districts	College Courses	Credit
Phoenix Union	CLS 105-Phlebotomy Techniques	7
Phoenix Union	DAE/DHE 101-Basic Operatory Procedures	3
Phoenix Union	DFT 121-Technical Drafting I	3
Phoenix Union	DFT 122-Technical Drafting II	3
Phoenix Union	FON 116-Commercial Food Preparation I	3
Phoenix Union	SLG 220-Fingerspelling	3

Rio Salado Community College

High School District	College Courses	Credit
Deer Valley	CRP 102AA-Concrete Forms: Building Layout	1
Deer Valley	CRP 102AB-Concrete Forms: Residential Footing	1
Deer Valley	CRP 102AC-Concrete Forms: Footing & Bolt Layout	1
Deer Valley	CRP 102AD-Concrete Forms: Basic Wall Forms	1
Deer Valley	CRP 102AE-Concrete Forms: Circular Wall Forms	1
Deer Valley	CRP 102AF-Concrete Forms: Column Form	1
Deer Valley	CRP 102AG-Concrete Forms: Spamdrel Beam	1
Deer Valley	CRP 102AH-Concrete Forms: Deck Forms & Shoring	1
Deer Valley	CRP 102AI-Concrete Forms: Concrete Stair Forms	1
Deer Valley	CRP 102AJ-Concrete Forms: Tilt-up Construction I	1
Deer Valley	CRP 102AK-Concrete Forms: Tilt-up Construction II	1
Deer Valley	CRP 102AL-Concrete Forms: Bridge Pier Column	1
Deer Valley	CRP 102AM-Concrete Forms: Flatwork	1
Deer Valley	CRP 102AN-Concrete Forms: Culverts, Headwall & Wingwalls	1
Deer Valley	CRP 102AO-Concrete Forms: Concrete Wall Blockout	1
Deer Valley	CRP 102AP-Concrete Forms: Gang Forms	1
Deer Valley	CRP 102AR-Concrete Forms: Retaining Wall Footing	1
Deer Valley	CRP 103AA-Framing: Basic Wall Framing	1
Deer Valley	CRP 103AB-Framing: Wall Layout,Plating & Detailing	1
Deer Valley	CRP 103AD-Framing: Floor Joist	1
Deer Valley	CRP 103AE-Framing: Gable Roof	1
Deer Valley	CRP 103AF-Framing: Hip Roof	1
Deer Valley	CRP 103AG-Framing: Intersecting Roof	1
Deer Valley	CRP 103AI-Framing: Wood Stairs	1
Deer Valley	CRP 103AJ-Framing: Framing Square	1
Deer Valley	CRP 103AL-Framing: Advanced Framing Square Applciation	1
Deer Valley	CRP 103AM-Framing: Residential Layout	1
Deer Valley	CRP 104AC-Exterior Finish: Canopy	1
Deer Valley	CRP 104AE-Exterior Finish: Roof Coverings	1
Deer Valley	CRP 104AH-Exterior Finish: Commercial Display	1
Deer Valley	CRP 105AA-Exterior Finish: Standard Door Installation	1
Deer Valley	CRP 105AC-Exterior Finish: Running Trim	1
Deer Valley	CRP 105AG-Exterior Finish: Door Hardware	1
Deer Valley	CRP 105AI-Interior Finish: Metal Partitions	1
Deer Valley	CRP 105AJ-Interior Finish: Soffit Panel	1
Deer Valley	CRP 106AA-Interior Systems: Metal Frame Walls	1
Deer Valley	CRP 106AB-Interior Systems: Dry Wall Applications	1
Deer Valley	CRP 106AH-Interior Systems: Dry Wall Estimation of Material	1
Deer Valley	CRP 106AK-Interior Systems: Suspended Lay-in Ceilings	1
Deer Valley	CRP 199 AA-Special Projects	1

High School District	College Courses	Credit
Deer Valley	CRP 199 AB-Special Projects	2
Deer Valley	CRP 199 AC-Special Projects	3
Deer Valley	CRP 200 WA-Cooperative Education	1
Deer Valley	CRP 200 WB-Cooperative Education	2
Deer Valley	CRP 200 WC-Cooperative Education	3
Deer Valley	CRP 200 WD-Cooperative Education	4

Scottsdale Community College

High School District	College Courses	Credits
Scottsdale	ACC 107-Applied Accounting	4
Scottsdale	CIS 105-Survey of Data Processing	3
Scottsdale	ELT 120-DC and AC Circuits	5
Scottsdale	ELT 126 Electronics Fabrication	2
Scottsdale	ELT 184-Digital Concepts	2
Scottsdale	FON 144-Gourmet Foods	3
Scottsdale	HMM 132-Culinary Arts Specialty I	4
Scottsdale	HMM 134-Culinary Arts Specialty II	4
Scottsdale	HMM 136-Culinary Arts Specialty III	2
Scottsdale	HMM 138-Culinary Arts Specialty IV	2
Scottsdale	NUR 110-Nursing Science I	10
Scottsdale	OAS 101-Typing I	3
Scottsdale	OAS 102-Typing II	3
Scottsdale	OAS 115-Alphabetic Shorthand	3
Scottsdale	OAS 117-Alphabetic Shorthand II	3
Scottsdale	TCM 110-Studio Production	3
Scottsdale	TCM 180-Television Techniques	4

- **Community College - University Articulation**

Arizona State University

Arizona State University and the **Maricopa Community Colleges** are developing articulation agreements for a variety of university majors. These agreements specify the MCCCD courses that can be taken in lieu of ASU courses for a given degree. These agreements will apply to students enrolling in either institution between Fall'85 and Fall'87 provided they remain continuously enrolled.

The following agreements are being developed for the College of Liberal Arts and Sciences:

General Studies
Biology
English
History (BA & BS)
Mathematics (BA & BS)

Foreign Languages:
Asian(Chinese/Japanese)
French
German
Italian
Russian
Spanish

The following agreements are being developed for the College of Engineering and Applied Science:

General Studies
Bioengineering
Chemical Engineering
Civil Engineering
Agribusiness
Environmental Resources/Agriculture
Aerospace Engineering
Computer Science Engineering
Computer Systems Engineering
Computer Engineering Technology
Electrical Engineering
Energy Systems Engineering
Industrial Engineering
Construction
Engineering Science
Graphic Communication Engineering Technology
Graphic Communication Industrial Technology
Material Science
Mechanical Engineering
Manufacturing Engineering
Microelectronic Engineering Technology
Aeronautical Engineering Technology
Nuclear Sciences
Electronic Engineering Technology
Manufacturing Engineering
Engineering Business and Prelaw
Geological Engineering
Mechanical Engineering Technology
Manufacturing Engineering Technology
Premedical Engineering
Systems Engineering
Welding Engineering Technology

Arizona State University and the **Maricopa Community Colleges** already have an "Industrial Supervision Program Articulation Agreement". The MCCCD students may apply up to 64 community college credits towards an ASU Bachelor of Science in Industrial Technology degree. Up to 40 of the college credits may be in any of the following specialties:

Advertising Art
Automotive Technology
Biomedical Clinical Technician
Building Safety & Construction Technology
Building & Construction Inspection
Civil Engineering Technology
Clinical Laboratory Technology
Construction Electrician
Diesel Engine Mechanics
Diesel/Heavy Equipment Technology
Drafting Technology
Drafting Technology: Construction
Drafting Technology: Electro-Mechanical
Drafting Technology: Manufacturing
Drafting Technology: Mechanical
Electrical Technology
Electronics Computer Technology
Electronics Engineering Technology
Electronics Technology
Electronics/Microprocessor Technology
Equipment Operation
Fire Science
Heavy Duty Mechanics
Ironworking
Machinist
Tool & Die Technology
Manufacturing Process Technology
Medical Electronics Service Technician
Plant Equipment Operation
Plant Mechanics
Printed Circuit Board Technology
Production Management
Quality Control Technology
Refrigeration & Air Conditioning Technology
Semiconductor Process Technology
Welding Technology

Northern Arizona University

Northern Arizona University and the **Maricopa Community Colleges** agreed upon MCCCD courses that can transfer into NAU programs. The institutions jointly developed Transfer Advisement Sheets that list NAU course requirements for various programs and show the MCCCD course equivalents.

c. **Occupational Credential Acceptance**: Granting of college credit for having a valid occupational credential.

- The **Glendale Community College** Nursing Program grants first semester NUR credits to graduates of the **Phoenix Union High School District** Practical Nursing Program who have a valid license.

- **Maricopa Technical Community College** grants first year NUR credits to graduates of the **Phoenix Union High School District** Practical Nursing Program who have a valid Practical Nursing License.

- **Maricopa Technical Community College** grants 5 college credits for WLD 208-Advanced Arc Welding to graduates of the **Mesa Unified School District, Paradise Valley Unified School District, Phoenix Union High School District**, and **Scottsdale Unified School District** Welding Programs. To receive the credit, graduates must have valid American Welding Society Certification for Structural Steel.

- **Mesa Community College** grants first year NUR credits to graduates of the **Phoenix Union High School District** Practical Nursing Program. To receive the credit, graduates must have valid Practical Nursing Licenses.

- **Phoenix College** grants first year NUR credits to graduates of the **Phoenix Union High School District** Nursing Program who possess a valid Practical Nursing License.

- **Scottsdale Community College** grants first year NUR credits to graduates of the **Phoenix Union High School District** Practical Nursing Program who possess a valid Practical Nursing License.

d. **Resource Coordination:** Sharing of Faculty, Facilities, and/or Equipment

- **Glendale Community College** uses the **Deer Valley Vo-Tech Center's** Automotive shop to teach two automotive technology courses. The Deer Valley Unified School District and Glendale Community College students study Diesel Engine Theory and Passenger Car and Light Truck Diesel together. The instructor is employed by Glendale Community College. High school students are eligible for up to 6 hours of course credit. College students pay tuition and receive regular college credit.

- **Glendale Community College** uses the **Deer Valley Vo-Tech Center** Machine Shop to teach four courses for the GCC Manufacturing Technology Program. Students from the college and the Deer Valley Unified School District study Machine Shop Theory I, Machine Tools and Welding I and II together. The instructors are paid by Glendale Community College. High school students are eligible for up to 12 hours of course credit. College students pay tuition and receive regular college credit.

- **Glendale Community College** rents classroom space to teach Office Education, Accounting and Nutrition courses at the **Deer Valley Vo-Tech Center.**

- **Maricopa Technical Community College** conducted a 4 credit Business Personal Computer Course for 60 youth participating in a **Chicanos Por La Causa** summer youth program funded by the Job Training Partnership Act.

- **Mesa Community College** teaches Internal Combustion Engines Theory, Automotive Body Repair, Principles of Air Conditioning Systems, and Electrical Circuitry and Controls for both high school and college students at the **Mesa Vo-Tech Center.** Instruction is being conducted by dually certified Mesa Vo-Tech teachers.

- **Mesa Community College** lets **Mesa and Scottsdale Unified School District** students study Machine Shop Theory I, Machine Tools, and Machining Practices I in its laboratories. The instructor is employed by the Mesa Vo-Tech Center. High school students can receive 8 hours of course credit.

- **Phoenix College** is using the **Phoenix Union Metro Tech** VIP culinary arts kitchen and dining room for Commercial Food Preparation I. The instructor is employed by Metro Tech VIP and Phoenix College provides a part-time laboratory assistant. High school students receive 3 hours of course credit upon admission to Phoenix College and college students pay tuition and receive 3 hours of college credit.

- **Phoenix College** is using the **Phoenix Union Metro Tech** VIP Fingerspelling laboratory to teach high school and college students Fingerspelling (Interpreter for the Deaf Program). The instructor is employed by Metro Tech. High school students receive 3 hours of course credit when admitted to Phoenix College. College students pay tuition and receive 3 hours of college credit.

- **Phoenix College** is letting **Phoenix Union High School District** use its paradental clinic to teach Dental Assistant laboratory skills taught in the Basic Operatory Procedures course. Metro Tech employs the instructor. High school students receive 2 hours of course credit for the lecture portion of the course when they are admitted to Phoenix College. They pay tuition and receive 1 hour of regular college credit for the laboratory skills learned at Phoenix College.

- **Phoenix College** provides clinical instruction for **Phoenix Union High School District** students learning the laboratory skills that comprise a Phlebotomy Techniques course. The instructor is employed by Phoenix College. High school students will receive 4 hours of course credit for the lecture portion of the course when they enroll at Phoenix College. They pay tuition and receive 3 hours of regular college credit for the clinical portion of the course.

- **Phoenix College** utilizes **Metro Tech's** Travel Agent Technology Lab to teach Phoenix College students taking classes in the same field.

- **Scottsdale Community College** is using **Scottsdale Unified School District** facilities to teach courses in the Culinary Arts, Electronics/Microprocessor Technology, and Motion Picture/Television Production Programs. A Scottsdale Community College instructor teaches Gourmet Cooking in the Scottsdale Vocational Techincal Center Culinary Arts kitchen and restaurant. Introduction to Microcomputer Programming and Electronics Fabrication is taught in the Vocational Technical Electronics Laboratory by a community college instructor. The Scottsdale Vocational Technical Center Television Production Laboratory is used to teach a Television Techniques course by a Scottsdale Community College instructor. High school students receive course credit upon admission to the college. College students pay tuition and receive college credit.

- **Phoenix Metro Tech** shares resources with the **Arizona State Employee Federal Credit Union.** Metro Tech provides space, utilities, and equipment for an on-site credit union. The Arizona State Employee Federal Credit Union (ASEFCU) staffs the credit union and provides advanced training for Metro Tech banking students. At the end of the year, ASEFCU hires some graduates of the program to work in their credit unions.

- **Phoenix Metro Tech** cooperatively shares resources with **Carlos Valenzuela Academy,** a private school, to conduct cosmetology training at Metro Tech. Metro Tech provides facilities and equipment. The instructor is a highly skilled cosmetologist who owns and operates his own school at another location.

e. **Joint Program Development:** Cooperative development of program by high school and college administrators.

- **Phoenix College** and **Phoenix Union High School District** administrators are working together to develop the following programs: Food Service Administration, Interpreter for the Deaf, Medical Assistant, and Phlebotomy.

B. OPPORTUNITIES FOR COORDINATION BETWEEN PUBLIC AND PRIVATE SCHOOLS

Establishing a dialogue between public and private schools/colleges to identify mutually beneficial relations and piloting some individual cooperative projects and activities were the objectives for 1986.

1. One high school district initiated dialogue concerning training with a proprietary medical school. Discussions are still in the early stages.

2. Job openings identified by the **Maricopa Community Colleges'** Economic Development Specialist were shared with appropriate proprietary schools, community colleges, and community based organizations for the purpose of assisting new companies in their recruitment efforts.

3. Several of the secondary districts in the county contract with private cosmetology schools to provide training for interested high school students.

4. A private cosmetology school conducts training for students in the **Phoenix Union High School District's Metro Tech** facilities. Metro Tech supplies the facility and equipment.

C. **LABOR MARKET DEMAND AND PROGRAM PRIORITIES**

The objectives for 1986 included developing a booklet for students describing career options for high demand occupations, conducting additional training on effectively using labor market information, directing priority attention to high demand occupations, maintaining industry-current occupational programs, and facilitating the gathering of information needed to analyze which vocational courses teach competencies that meet graduation requirements.

1. DES Occupational Employment Forecast Information was discussed and disseminated to planning council members. Some training providers share the occupational information with faculty and counselors.

2. Labor market information is increasingly being used to identify high demand programs and set priorities. The community college district and most high school districts now routinely examine labor market information when considering adding, deleting, or modifying programs.

3. The Maricopa County Vocational Education Planning Council is utilizing a portion of its 25% monies earmarked by the Arizona Department of Education for secondary schools to develop a career guidance booklet targeted to eighth graders. The Deer Valley Unified District agreed to serve as the fiscal agent for the project to which every secondary district in the county contributed a portion of its 25% monies allotment. An advisory committee was established to oversee the project. The Council expects to be ready to distribute the booklet to students by December 1986. The booklet will describe career options for high demand occupations so that students can plan their future education and training based on their career interests.

4. The secondary school districts utilized their state 25% monies for purchasing equipment, coordinating vocational programs, articulation, and other uses designed to improve and maintain industry-current occupational programs.

5. At the request of industry, **Glendale Union High School District** developed a new computer applications course.

6. **Glendale Union High School District** analyzed the math competencies that meet graduation requirements and piloted the use of certain vocational classes for meeting math graduation credit requirements.

7. **Maricopa Community Colleges** are offering a variety of unique services to meet the labor market needs of business/industry. MCCCD representatives participate in attracting and meeting the training needs of new businesses locating in Maricopa County. These economic development activities are frequently conducted in conjunction with other organizations such as the Phoenix

Metrogroup and the Chambers of Commerce, Arizona Department of Commerce, the Arizona Department of Economic Security Research Administration, the Arizona Department of Education, Maricopa County and the City of Phoenix Job Training Partnership Act Administrations, utilities, real estate firms, architectural/ engineering firms, financial institutions, industrial developers and others. As a result of these economic development activities, the Maricopa Community Colleges have become involved with work force acquisition and training of new hires for newly located firms.

Phoenix Metrogroup sponsored a couple of significant events in which MCCCD representatives participated. Thirty employees participated in the Phoenix Metrogroup's celebration of Business Recognition Week. MCCCD employees and other volunteers contacted local business leaders to acknowledge their contributions to the Valley and to make them aware of services that are available to businesses through the Phoenix Metrogroup. MCCCD representatives also participated in Open House Phoenix which was sponsored by the Phoenix Metrogroup. A hundred firms were invited to the Open House in order to interest them in locating in the Valley.

MCCCD representatives met with dozens of companies during the year to identify training needs and to inform employers of the availability of training services. Training programs were developed to meet the needs of individual employers, such as:

a. **BFGoodrich Co.** - Training was provided for 46 product assemblers. Funds provided by Industry Training Services, the Job Training Partnership Act, etc. **South Mountain Community College** is conducting the training.

b. **Automotive Aftermarket** - Nine courses were developed dealing with the latest electronic systems of General Motors, Ford and Chrysler cars. Trainees are journeyman auto technicians employed by firms other than major car manufacturers. The courses will be offered three times between June 1986 and April 1987 (390 training slots). **Glendale Community College** is conducting the training. The project received funding from Industry Training Services.

c. **Sigler and Faigen, Inc. - Phoenix College** developed training for 40-50 Sigler and Faigen, Inc. managers from 5 locations. The 25 hours of instruction addressed subjects like human relations, motivating employees, leadership, communication, equal employment opportunity, training responsibility, and time management and delegation.

d. **Coventry Homes Construction Interior Design and Mortgage** - Courses in blueprint reading and business psychology were conducted for Coventry employees by **Phoenix College.**

e. **Federal Aviation Administration - Phoenix College** is working with the FAA to determine how FAA classes can be applied to an Associate degree. Phoenix College has been studying the training conducted at the FAA academies to determine how the training provided equates with college courses. In addition, a series of courses (English, Mathematics and Psychology) have been set up for airport workers.

f. **Mayo Clinic - Scottsdale Community College** developed a curriculum with the Mayo Clinic to train medical secretaries. Mayo expects to employ students who complete this one year, 30 credit program. Beginning in January, Phoenix College will train 40 desk attendants and receptionists. Mayo will employ all successful completers.

g. **Garrett Turbine Engine Co. - Maricopa Technical Community College** developed short courses for basic IBM computer literacy training and specific applications for Garrett employees. As of August 1986, 640 employees including engineers, scientists, accountants, managers, secretaries, etc., enrolled in these short courses.

h. **Sub-zero Freezer - Maricopa Technical Community College** developed a 6 hour noncredit course on the techniques of silver brazing for 16 production line workers and supervisors.

i. **Boswell Hospital** - In cooperation with Boswell Hospital, **Maricopa Technical Community College** developed a Unit Coordinator class for evening students, including Boswell employees who wanted to upgrade their skills.

j. **American Safety Equipment Corporation - Rio Salado Community College** conducted supervisory training for 16 lower level American Safety supervisors in three one credit modules.

k. **Motorola, Inc. - Mesa Community College** is offering Electro-Mechanical and Electronic Technology courses to the Motorola Government Electronics Group, the Mesa Motorola plant, and the Motorola Semiconductor Products Sector employees. Over 50 Motorolans became full-time students in August 1986.

The Government Electronics Group and the Mesa Plant are sending 33 full-time students to Mesa Community College starting August 1986. Each student will complete approximately 68 credits in the Electro-Mechanical and Electronic Technology Courses. These students will complete their training in December 1987.

The Semiconductor Products Sector is sending 22 full-time students to Maricopa Technical Community College starting in August 1986. Each student will complete approximately 68 credits in Electro-Mechanical Courses. Training will be completed in December 1987.

In addition to the preceding examples, **Rio Salado Community College** also conducted onsite training for many employers and labor organizations including:

Anchor National Life Insurance
Arizona Public Service
Asbestos Workers Union
Associated Builders and Contractors
Associated General Contractors of America
Bricklaying and Tilesetting Union
Carpenters Union
Digital Equipment Corporation
First Interstate Services
Garrett Pneumatics
Garrett Turbine Engine
Gen Rad
Glaziers Union
Honeywell
Ironworkers Union
Kitchell Corporation
Litton Industries
McDonnell Douglas
Millwrights Union
Motorola Government Electronics Group
Motorola Semiconductor Processing
Mountain Bell
National Association of Credit Management
Operating Engineers Union
Painters and Decorators Union
Phoenix Electrical Union
Pipefitters/Plumbers Union
Plasters/Cement Masons Union
Revlon
Roofers Union
Safeway Stores
Salt River Project
Sentry Insurance
Sheetmetal Union
Syntex Ophthalmics Co.
Teamsters Union

D. FUNDING PRIORITIES

The 1986 objective was to develop a process and criteria for determining funding priorities for the 25% monies earmarked for county planning. This was accomplished in early 1986. The majority of the funding was used to improve secondary occupational programs based on the Arizona Department of Education's list of allowable priorities. A small portion of the 25% monies was also used to develop a booklet for eighth graders describing career options. The booklet is scheduled for completion in December 1986.

III. OBJECTIVES FOR 1987-1988

A. ISSUE: ARTICULATION OF SECONDARY AND POSTSECONDARY PROGRAMS

GOAL 1:

Achieve horizontal and vertical articulation.

OBJECTIVE 1:

Conduct articulation projects between secondary and post-secondary institutions.

OBJECTIVE 2:

Identify effective procedures for articulation.

OBJECTIVE 3:

Establish and maintain a clearinghouse/network to disseminate information and coordinate activities about ongoing articulation projects.

OBJECTIVE 4:

Develop a cost/benefit analysis for articulation efforts.

OBJECTIVE 5:

Develop an effective tracking system to followup on students who articulate to the community college system and to determine how many are continuing their education.

GOAL 2:

Develop effective ways of sharing resources.

OBJECTIVE 1:

Simplify the intergovernmental agreement process.

OBJECTIVE 2:

Coordinate support services such as placement, guidance and counseling, handicapped and equity, basic skill training/ remediation, and in-service activities.

OBJECTIVE 3:

Identify procedures for sharing human, physical, and fiscal resources.

B. **ISSUE: OPPORTUNITIES FOR COORDINATION BETWEEN PUBLIC AND PRIVATE SCHOOLS**

GOAL:

Identify situations in private and public institutions where coordination is mutually beneficial and pilot some individual cooperative projects and activities.

OBJECTIVE 1:

Establish a dialogue between public and private schools/ colleges to identify mutually beneficial relationships. Potential topics include:

a. Articulation between high schools and proprietary schools, and between community colleges and proprietary schools.

b. Relative costs to each party of potential cooperative agreements.

c. Accreditation issues that joint agreements between community colleges and proprietary schools might involve.

OBJECTIVE 2:

Pilot some individual projects and activities which involve cooperation/coordination between public and private schools (e.g., placement, recruitment, sharing of resources, coordinated activities, etc.).

C. **ISSUE: LABOR MARKET DEMAND AND PROGRAM PRIORITIES**

GOAL:

Utilize labor market information to assist in program planning, curriculum decisions and in-service training.

OBJECTIVE 1:

Share labor market information with faculty, counselors, and students as a tool in identifying employment opportunities by:

a. including information about needed occupational demand areas in course catalogs to inform counselors, students and faculty of industry needs.

b. developing a small booklet describing career options for high demand occupations that could be sent to students' homes and made available to schools. Booklet should include all types of occupations.

OBJECTIVE 2:

Conduct additional training sessions on effectively using labor market information (on-going).

OBJECTIVE 3:

Direct priority attention to high demand occupations(in terms of employment opportunities). Offer programs with less demand in a limited number of locations (on-going).

OBJECTIVE 4:

Maintain industry-current occupational programs.

OBJECTIVE 5:

Facilitate the gathering of information needed to analyze which vocational courses teach competencies that meet graduation requirements. This can be accomplished by comparing competencies of vocational programs with competencies of required courses in order to see if vocational programs teach the same competencies.

D. **ISSUE: FUNDING PRIORITIES**

GOAL:

Determine funding priorities for State Funding Model's 25% monies earmarked for county planning.

OBJECTIVE 1:

Develop a process and criteria for determining funding priorities for 25% monies earmarked for county planning.

IV. RECOMMENDATIONS

The recommendations that follow address issues that are statewide, instead of pertaining to Maricopa County only. The first recommendation is directed to the Arizona Department of Education and the second is directed to the Arizona Legislature.

A. ISSUE: ARIZONA DEPARTMENT OF EDUCATION FUNDING PRIORITY LIST

RECOMMENDATION:

That the Arizona Department of Education improve the quality of the funding priority list that it uses for funding purposes.

OBJECTIVE 1:

Analyze program clusters so that they are more consistently and appropriately grouped on the ADE Funding Priority List.

OBJECTIVE 2:

Develop and disseminate adequate documentation of the funding priority list. Cite sources of the information and obtain review and concurrence from the original data sources to ensure that the information is appropriately interpreted and used.

B. ISSUE: NEEDED LEGISLATIVE CHANGES

RECOMMENDATION 1:

That the Arizona Legislature remove legal barriers to cooperation to facilitate the articulation process.

OBJECTIVE 1:

Simplify the intergovernmental agreement process to enable schools/colleges/agencies to more easily enter into articulation agreements.

RECOMMENDATION 2:

That the Arizona Legislature provide incentives to business and industry to encourage support and participation in vocational education.

OBJECTIVE 1:

Provide tax credits for the donation of equipment to public vocational education programs meeting labor market needs in high demand and/or emerging occupations.

OBJECTIVE 2:

Provide tax credits for the donation of business or industry equipped space to conduct vocational education programs where the program is open for attendance to the general public as well as the firm's employees.

RECOMMENDATION 3:

That the Arizona Legislature improve access to publicly funded research.

OBJECTIVE 1:

Require that copies of research studies that result from publicly funded research be placed in a central depository where they can be conveniently retrieved by citizens.

OBJECTIVE 2:

Require that publicly funded research studies be filed in a computer retrievable system.

C. **ISSUE: <u>BARRIERS TO ARTICULATION</u>**

RECOMMENDATION 1:

That the State Board of Directors for Community Colleges in Arizona and State Board of Education Joint Coordinating Committee improve the ability of secondary schools and colleges to articulate their occupational programs.

OBJECTIVE 1:

Coordinate secondary school and college teacher certification requirements for occupational teachers so that teachers from either type institution can teach both secondary school and college students.

V. APPENDICES

A. Inventory of Training Programs

B. Economic Outlook for Maricopa County

C. Employment by Industry

D. 1986 Employment Forecasts by Occupation

MARICOPA COUNTY
INVENTORY OF OCCUPATIONAL TRAINING PROGRAMS

TRAINING AREAS \ ORGANIZATIONS	SECONDARY																POST-SECONDARY						
	1 ACUA FRIA	2 BUCKEYE	3 CAVE CREEK	4 CHANDLER	5 DEER VALLEY	6 DYSART	7 GILA BEND	8 GILBERT	9 GLENDALE UNION	10 MESA	11 PARADISE VALLEY	12 PEORIA	13 PHOENIX UNION	14 SCOTTSDALE UNIFIED	15 TEMPE	16 TOLLESON	17 WICKENBURG	18 MARICOPA COMM. COLLEGES	19 MARICOPA SKILL CENTER	20 PROPRIETARY	21	22	23
Agriculture/Horticulture	X	X		X	X	X		X		X		X		X	X	X		X					
Business																							
Accounting	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X			
Computer Science/Data Processing	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X		X			
Finance & Banking					X								X					X		X			
Supervision/Management					X		X		X	X										X			
Marketing/Dist. ED.	X		X	X	X	X	X		X	X	X	X	X	X	X			X	X	X			
Media Technology/Broadcasting										X			X	X				X		X			
Office Occupations	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X			
Real Estate																		X		X			

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MARICOPA COUNTY
INVENTORY OF OCCUPATIONAL TRAINING PROGRAMS

TRAINING AREAS / ORGANIZATIONS	SECONDARY																POST-SECONDARY						
	1 AGUA FRIA	2 BUCKEYE	3 CAVE CREEK	4 CHANDLER	5 DEER VALLEY	6 DYSART	7 GILA BEND	8 GILBERT	9 GLENDALE UNION	10 MESA	11 PARADISE VALLEY	12 PEORIA	13 PHOENIX UNION	14 SCOTTSDALE UNIFIED	15 TEMPE	16 TOLLESON UNION	17 WICKENBURG	18 MARICOPA COMM. COLLEGES	19 MARICOPA SKILL CENTER	20 PROPRIETARY	21	22	23
Health																							
Allied Health					X				X	X	X	X	X	X		X		X	X	X			
Dental					X					X			X	X				X		X			
Nursing		X			X					X	X		X	X		X		X	X				
Home Economics/HERO	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
Service Occupations																							
Administration of Justice/Law Enforcement													X					X		X			
Cosmetology					X					X		X	X							X			
Fire Science																		X					
Hospitality/Culinary													X	X				X	X				
Interpreter Training													X					X					
Human Services																		X					

MARICOPA COUNTY
INVENTORY OF OCCUPATIONAL TRAINING PROGRAMS

TRAINING AREAS / ORGANIZATIONS	SECONDARY																POST-SECONDARY						
	1 AGUA FRIA	2 BUCKEYE	3 CAVE CREEK	4 CHANDLER	5 DEER VALLEY	6 DYSART	7 GILA BEND	8 GILBERT	9 GLENDALE UNION	10 MESA	11 PARADISE VALLEY	12 PEORIA	13 PHOENIX UNION	14 SCOTTSDALE UNIFIED	15 TEMPE	16 TOLLESON UNION	17 WICKENBURG	18 MARICOPA COMM. COLLEGES	19 MARICOPA SKILL CENTER	20 PROPRIETARY	21	22	23
Library Technician																		X					
Technology & Trade & Industrial																							
Air Conditioning/Refrigeration					X					X			X					X		X			
Auto Body Repair	X									X	X			X	X			X	X	X			
Automotive Mechanics	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
Aviation										X			X					X		X			
Building/Construction				X	X					X	X		X	X		X	X	X	X				
Carpentry/Woodworking/Cabinet	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
Commercial Art/Photography	X				X					X	X		X	X				X		X			
Diesel/Heavy Equipment Tech.																		X		X			
Drafting	X	X		X	X	X		X	X	X	X	X	X	X	X	X	X	X		X			

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MARICOPA COUNTY
INVENTORY OF OCCUPATIONAL TRAINING PROGRAMS

TRAINING AREAS / ORGANIZATIONS	SECONDARY																POST-SECONDARY						
	1 AGUA FRIA	2 BUCKEYE	3 CAVE CREEK	4 CHANDLER	5 DEER VALLEY	6 DYSART	7 GILA BEND	8 GILBERT	9 GLENDALE UNION	10 MESA	11 PARADISE VALLEY	12 PEORIA	13 PHOENIX UNION	14 SCOTTSDALE UNIFIED	15 TEMPE	16 TOLLESON UNION	17 WICKENBURG	18 MARICOPA COMM. COLLEGES	19 MARICOPA SKILL CENTER	20 PROPRIETARY	21	22	23
Electronics/Electrical	X				X	X		X	X	X	X	X	X	X	X	X	X	X	X	X			
Graphic Arts	X			X	X	X				X	X		X	X		X				X			
Industrial Education/Metals		X	X		X	X	X		X	X	X	X	X	X	X	X		X	X	X			
Machine Shop					X					X			X	X				X	X				
Manufacturing		X			X					X			X	X				X					
Marine Power																							
Mechanical Maintenance												X							X				
Mining																							
Power Plant																							
Small Engine Repair	X	X					X	X				X		X				X	X				
Solar																		X					

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MARICOPA COUNTY
INVENTORY OF OCCUPATIONAL TRAINING PROGRAMS

TRAINING AREAS / ORGANIZATIONS	SECONDARY																POST-SECONDARY						
	1 AGUA FRIA	2 BUCKEYE	3 CAVE CREEK	4 CHANDLER	5 DEER VALLEY	6 DYSART	7 GILA BEND	8 GILBERT	9 GLENDALE UNION	10 MESA	11 PARADISE VALLEY	12 PEORIA	13 PHOENIX UNION	14 SCOTTSDALE UNIFIED	15 TEMPE	16 TOLLESON UNION	17 WICKENBURG	18 MARICOPA COMM. COLLEGES	19 MARICOPA SKILL CENTER	20 PROPRIETARY	21	22	23
Truck Driving																				X			
Wastewater																		X					
Welding	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
Miscellaneous Technologies																							
Dog Grooming																				X			
Furniture Making																							
Gunsmithing																				X			
Jewelry/Silversmithing																				X			
Meatcutting/Butchering																			X				
Plastics									X		X				X	X							
Travel													X					X					
Upholstery									X	X	X									X			

39/40

Maricopa County

The economic forecast for Maricopa County continues to be bright. Although growth will not be at the breakneck pace of 1984 and 1985, there will be more than 125,000 additional jobs in the county by 1988. Since Maricopa County accounts for nearly two-thirds of population, employment, and income in Arizona, it has a major impact on the state's economic performance.

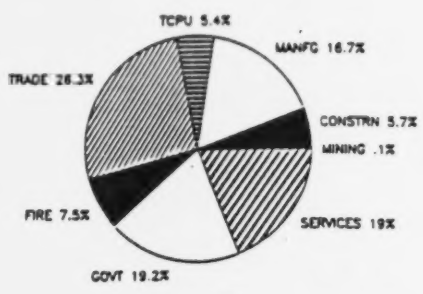
Unemployment over the last six months has increased only by a tenth of a percent as compared to the annual average of 5.1 percent in 1985. While the unemployment rate has not changed significantly, employment did not grow sufficiently to keep the rate from rising. In July, the unemployment rate was 5.4 percent, well below the national average of 6.9 percent. Unemployment should remain near 5.2 percent for the rest of this year before falling to 4.9 percent and 4.7 percent in 1987 and 1988 respectively.

The largest source of new jobs in the next 2 1/2 years will be the service industry. Nearly 36,000 people will be added to this industry by 1988. The rate of growth, however, will be well below that observed during the explosive 1984-1985 period. Among the services sectors, business services will grow the most, followed by health services.

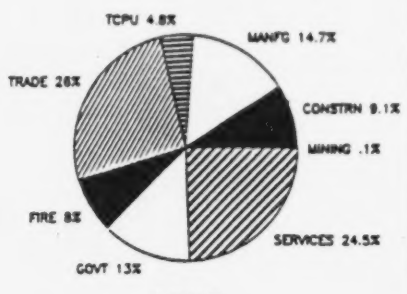
The trade industry will be the second largest source of new jobs in the county. This industry will add nearly 15,000, 14,000, and 10,000 people in 1986, 1987, and 1988 respectively. Growth will come primarily from department stores, food stores, and eating and drinking places. Employment in eating and drinking places will be relatively greater than the other sectors. Relatively high growth will also take place in the automotive-related business--particularly, car dealers. This will be due to the lower interest rates that the nation is expected to continue to enjoy.

Growth in construction will be spurred by lower interest rates and strong population growth. On the one hand, the widely reported surplus of office space in the Phoenix area has resulted in lower growth in commercial construction employment; while the rapid population growth, along with lower interest rates, has sustained residential construction employment. Massive road building activities should also help to offset losses caused by lower office construction and recent layoffs at the Palo Verde Nuclear Power Plant in the Phoenix area. The number of jobs in construction is expected to rise only 4.1 percent this

MARICOPA EMPLOYMENT IN
SELECTED INDUSTRIES
1975 VS 1986



1975



1986

SOURCE: Arizona Department of Economic Security, Research Administration, July 1986.

BEST COPY AVAILABLE

Maricopa County Economic Forecasts
(Annual Averages, in Thousands)

	1985	Growth Rate	1986	Growth Rate	1987	Growth Rate	1988	Growth Rate
Labor Force	912.6	2.8%	984.9	7.9%	1,031.1	4.6%	1,071.0	3.8%
Unemployed	46.5	36.0%	51.0	9.6%	50.0	-1.9%	50.4	0.8%
Unemployment Rate	5.1%		5.2%		4.8%		4.7%	
Total Employment	866.0	1.5%	933.9	7.8%	981.1	5.0%	1,020.6	4.0%
Wage and Salary Employment	839.7	8.9%	887.8	5.7%	927.1	4.4%	965.8	4.1%
Manufacturing	130.3	3.8%	130.5	0.1%	135.6	3.9%	140.2	3.3%
Mining	0.6	-14.3%	0.6	0.0%	0.6	0.0%	0.5	-16.6%
Construction	77.3	15.2%	80.4	4.0%	81.5	1.3%	84.3	3.4%
TCPU	41.0	5.9%	42.2	2.9%	43.2	2.3%	44.6	3.2%
Trade	214.8	10.6%	230.7	7.4%	245.7	6.5%	258.9	5.3%
FIRE	63.1	12.1%	70.7	12.0%	74.0	4.6%	76.9	3.9%
Services	201.8	9.0%	217.4	7.7%	227.7	4.7%	237.6	4.3%
Government	110.9	7.5%	115.3	3.9%	118.9	3.1%	122.9	3.3%

NOTE: Totals may not add due to rounding. Growth rates are calculated using unrounded figures.

SOURCE: Arizona Department of Economic Security, Research Administration, July 1986.

year, which will be greater than the 1.3 percent growth expected in 1987. Construction is expected to bounce back again in 1988 with nearly 4.0 percent growth.

The largest share of the manufacturing employment in the county is in durable goods manufacturing. High-tech manufacturing should see a recovery for their products which have been depressed by intense foreign competition and slower-than-expected growth in demand. A lower valued dollar and some real attempts to lower costs should allow these firms to add workers by the end of this year. In addition, producers of defense-related products are hiring nearly as rapidly as last year and should continue to do so unless cutbacks are forced by the Gramm-Rudman-Hollings proposal to balance the budget. As a result, manufacturing should be able to hold its current level of employment or possibly see marginal growth in 1986 followed by higher growth of more than 3.0 percent in both 1987 and 1988.

Contrary to popular belief, the nondurable sector has been holding its own with roughly 20.0 percent of manufacturing employment. Among the nondurables, printing and publishing is expected to create the largest number of new jobs.

FIRE has been the fastest growing industry during the last three years. Employment in 1986 is expected to grow by about 12.0 percent, similar to the growth recorded in 1985. Most of the growth this year is taking place in both the finance and the real estate sectors. High growth in finance has been influenced by refinancing activities due to lower interest rates. Once financial institutions complete the bulk of their refinancing activities, the industry should slow and is expected to grow about 4.6 and 3.9 percent in 1987 and 1988.

The government sector will not see growth of the magnitude recorded last year (7.0 percent) as it becomes more influenced by cuts in federal funds. However, government employment will continue to grow at about 3 to 4 percent, corresponding to future population growth. The slower growth will be seen in all sectors of government--federal, schools, state, and local. The relative effects of spending cuts, however, are not yet known.

The outlook for Maricopa County remains healthy. The industries that should provide higher employment growth are services, trade, FIRE, and construction; while the manufacturing industry will regain its vigor in 1987 and 1988. It is expected that 1986 will be another good year, although unemployment will rise very slightly because of strong population growth and relatively slower employment growth.

APPENDIX C

TABLE 1
MARICOPA EMPLOYMENT BY INDUSTRY
AS A PROPORTION OF TOTAL NONAGRICULTURAL
WAGE AND SALARY EMPLOYMENT
(1985 Annual Averages)

Industry	Employment		
	#	%	Ranking
Manufacturing	130,300	15.5	3
Mining	600	0.1	8
Construction	77,300	9.2	5
T.C.P.U.*	41,000	4.9	7
Trade	214,800	25.6	1
F.I.R.E.**	63,100	7.5	6
Services	201,800	24.0	2
Government	110,900	13.2	4
Total	839,700	100.0	

(Note: Columns may not add to totals due to rounding.)

TABLE 2
MARICOPA EMPLOYMENT
BY INDUSTRY FOR 1981-1985
(Annual Averages in Thousands)

INDUSTRY	1981	1982	1983	1984	1985	1981-85 Chg.	1981-85 % Chg.
Manufacturing	116.8	111.8	112.1	125.1	130.3	13.5	11.6
Mining	0.4	0.5	0.6	0.6	0.6	0.2	50.0
Construction	49.3	44.1	53.2	66.2	77.3	28.0	56.8
T.C.P.U.*	33.5	35.7	35.8	39.2	41.0	7.5	22.4
Trade	168.9	168.6	173.9	194.9	214.8	45.9	27.2
F.I.R.E.**	47.2	48.5	51.1	56.0	63.1	15.9	33.7
Services	139.9	148.8	159.1	185.6	201.8	61.9	44.2
Government	99.5	99.9	101.0	102.1	110.9	11.4	11.5
Total	655.4	655.0	686.7	767.7	839.7	184.3	28.1

(Note: Columns may not add to totals due to rounding.)

* Transportation, Communications, and Public Utilities

** Finance, Insurance, and Real Estate

Source of Data: Labor Market Information, Research Administration, Arizona Department of Economic Security (CPS, 1/86)

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MARICOPA

OCCUPATIONAL EMPLOYMENT AND DEMAND

OCCUPATIONS IN ALPHABETIC ORDER

OES CODE	OES OCCUPATIONAL TITLE	EMPLOYMENT			JOB OPPORTUNITIES			GROWTH	
		1986	1987	1991	1986-87	1986-91	1990-91	1986-91	
21114	ACCOUNTANTS & AUDITORS	6,520	6,867	8,462	527	3,196	633	1,942	30%
25313	ACTUARIES	51	55	65	2	24	3	14	27%
53123	ADJUSTMENT CLERKS	1,236	1,294	1,556	112	671	134	320	26%
13014	ADMINISTRATIVE SERVICES MANAGERS	1,512	1,600	2,079	105	794	150	567	38%
53908	ADVERTISING CLERKS	161	168	209	15	93	19	48	30%
22102	AERONAUTICAL AND ASTRONAUTICAL ENGINEERS	1,413	1,520	1,886	125	588	116	473	33%
24305	AGRICULTURAL & FOOD SCIENTISTS	106	110	125	8	36	6	19	18%
22123	AGRICULTURAL ENGINEERS	92	98	129	6	45	8	37	40%
87702	AIR HAMMER OPERATORS	88	94	111	6	36	5	22	25%
93102	AIRCRAFT ASSEMBLERS - PRECISION	52	56	69	6	30	6	17	33%
85326	AIRCRAFT ENGINE SPECIALISTS	94	102	128	8	36	7	32	34%
85323	AIRCRAFT MECHANICS	853	900	1,101	56	314	63	248	29%
97702	AIRCRAFT PILOTS & FLIGHT ENGINEERS	402	516	668	39	221	44	186	39%
39002	AIRPLANE DISPATCHERS & AIR TRAFFIC CONTROLLERS	229	236	275	9	58	12	46	20%
79999	ALL OTHER AGRI., FORESTRY, FISHING, & RELATED	140	160	205	13	78	15	56	38%
67099	ALL OTHER CLEANING/BLDG. SERV., EX. PRIV. HOUSE	962	1,015	1,214	87	481	93	252	26%
59999	ALL OTHER CLERICAL & ADMINISTRATIVE SUPPORT	5,478	5,725	6,841	251	1,547	296	1,363	25%
87999	ALL OTHER CONST. & EXTRACTIVE, EXC. HELPERS	392	417	541	29	186	37	149	38%
87899	ALL OTHER CONSTRUCTION TRADES WORKERS	411	429	532	19	150	24	121	29%
85799	ALL OTHER ELECTRICAL MECHS./INSTALLERS/REPAIRERS	327	344	441	20	144	29	114	35%
22599	ALL OTHER ENGINEERING & RELATED TECHNICIANS	1,591	1,671	2,132	104	758	157	541	34%
22199	ALL OTHER ENGINEERS	1,513	1,606	2,037	104	658	126	524	35%
21199	ALL OTHER FINANCIAL SPECIALISTS	645	676	821	38	252	44	176	27%
81099	ALL OTHER FIRST LINE MGRS. - MAIN./PROD./CONST.	425	454	560	33	242	41	135	32%
65099	ALL OTHER FOOD SERVICE WORKERS	1,901	2,000	2,397	175	954	191	496	26%
98799	ALL OTHER FREIGHT, STOCK, & MATERIAL MOVERS, HAND	2,978	3,166	3,841	270	1,326	269	863	29%
93999	ALL OTHER HAND WORKERS	2,507	2,639	3,248	178	1,103	223	741	30%
32199	ALL OTHER HEALTH DIAG./TREATING PRACTITIONERS	49	51	63	5	33	6	14	29%
66099	ALL OTHER HEALTH SERVICE WORKERS	265	278	343	15	103	20	78	29%
98999	ALL OTHER HELPERS & LABORERS	16,547	17,517	21,311	1,385	7,264	1,470	4,764	29%
83099	ALL OTHER INSPECTORS, TESTERS, & RELATED	172	178	212	11	71	13	40	23%
28399	ALL OTHER LEGAL ASSISTANTS/TECHS., EXC. CLERICAL	33	34	42	1	15	1	9	27%
24399	ALL OTHER LIFE SCIENTISTS	*	*	*	0	1-	0	1-	*
92998	ALL OTHER MACHINE OPERATORS & TENDERS	3,806	3,940	4,575	236	1,313	280	769	20%
92997	ALL OTHER MACHINE SETTERS & SET-UP OPERATORS	528	540	612	30	154	39	84	16%
85119	ALL OTHER MACHINERY MAINTENANCE MECHANICS	*	*	*	0	0	0	0	*
21999	ALL OTHER MANAGEMENT SUPPORT WORKERS	2,290	2,423	3,183	181	1,320	259	893	39%
19999	ALL OTHER MANAGERS & ADMINISTRATORS	16,902	17,729	21,564	1,364	7,877	1,621	4,662	28%
97999	ALL OTHER MATERIAL MOVING EQUIPMENT OPERATORS	932	957	1,047	42	215	41	115	12%
58099	ALL OTHER MATERIAL RECORDING/SCHEDULING/DIST	1,720	1,788	2,077	107	614	112	357	21%
25319	ALL OTHER MATHEMATICAL SCIENTISTS	*	*	*	0	1	0	1	*
85999	ALL OTHER MECHANICS, INSTALLERS, & REPAIRERS	2,422	2,545	3,224	149	1,080	211	802	33%
92197	ALL OTHER METAL & PLASTIC MACH. SET-UP OPERS	34	36	42	1	10	0	8	24%
92198	ALL OTHER METAL & PLASTIC MACHINE OPERATORS	266	275	344	12	120	25	78	29%
97199	ALL OTHER MOTOR VEHICLE OPERATORS	3,403	3,567	4,285	208	1,204	238	882	26%
56099	ALL OTHER OFFICE MACHINE OPERATORS	870	909	1,116	84	563	110	246	28%
32999	ALL OTHER PARAPROF., PROFESSIONALS, & TECHS.	1,979	2,084	2,639	202	1,253	260	660	33%
24599	ALL OTHER PHYSICAL & LIFE SCIENCE TECHS.	141	147	177	6	53	9	36	26%
24199	ALL OTHER PHYSICAL SCIENTISTS	87	90	108	3	25	3	21	24%

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OCCUPATIONS IN ALPHABETIC ORDER

OES CODE	OES OCCUPATIONAL TITLE	EMPLOYMENT			JOB OPPORTUNITIES			GROWTH	
		1986	1987	1991	1986-87	1986-91	1990-91	1986-91	
95099	ALL OTHER PLANT & SYSTEM OPERATORS	74	78	89	2	24	3	15	20%
93197	ALL OTHER PRECISION ASSEMBLERS, METAL	193	208	245	13	66	9	52	27%
89899	ALL OTHER PRECISION FOOD & TOBACCO WORKERS	53	57	69	4	24	4	16	30%
89199	ALL OTHER PRECISION METAL WORKERS	192	202	259	15	104	19	67	35%
89799	ALL OTHER PRECISION PRINTING WORKERS	145	152	184	10	61	12	39	27%
89599	ALL OTHER PRECISION TEXTILE & APPAREL WORKERS	*	*	*	0	3	0	3	*
89399	ALL OTHER PRECISION WOODWORKERS	70	75	94	5	33	5	24	34%
89999	ALL OTHER PRECISION WORKERS	1,540	1,606	1,899	86	530	95	359	23%
92549	ALL OTHER PRINTING & RELATED MACHINE OPERS.	84	88	106	4	36	5	22	26%
92519	ALL OTHER PRINTING PRESS SET-UP OPERATORS	*	*	*	0	4	0	3	*
92529	ALL OTHER PRINTING RELATED SETTERS & SET-UP OPERS	113	116	127	3	25	3	14	12%
39999	ALL OTHER PROFESSIONAL, PARAPROF. & TECH.	5,586	5,818	6,922	300	1,936	375	1,336	24%
63099	ALL OTHER PROTECTIVE SERVICE WORKERS	1,478	1,556	1,950	129	768	162	472	32%
97399	ALL OTHER RAIL VEHICLE OPERATIVES & CONTROLLERS	*	*	*	0	1	0	1	*
27599	ALL OTHER RELIGIOUS WORKERS	40	43	56	3	23	4	16	40%
49999	ALL OTHER SALES & RELATED WORKERS	28,889	30,293	37,613	2,458	14,661	3,109	8,724	30%
43099	ALL OTHER SALES REPS. & SALESPERSONS, SERVICE	497	527	652	42	249	47	155	31%
61099	ALL OTHER SERVICE SUPERVISORS & MGR./SUPERVISORS	1,601	1,691	2,114	158	946	192	513	32%
69999	ALL OTHER SERVICE WORKERS	3,671	3,870	4,738	358	2,053	420	1,067	29%
27199	ALL OTHER SOCIAL SCIENTISTS	32	35	39	0	8	1	7	22%
31399	ALL OTHER TEACHERS & INSTRUCTORS	2,479	2,583	2,975	238	1,233	252	496	20%
32399	ALL OTHER THERAPISTS	45	49	57	1	19	2	12	27%
73099	ALL OTHER TIMBER CUTTING & RELATED WORKERS	57	62	72	6	23	4	15	26%
97989	ALL OTHER TRANSPORT. & MOVING EQUIP. OPERS	357	377	490	24	169	31	133	37%
97899	ALL OTHER TRANSPORTATION & RELATED WORKERS	80	85	97	5	26	3	17	21%
66023	AMBULANCE DRIVERS/ATTDTS.-EX. EMER. MED. TECHS.	31	32	40	2	14	3	9	29%
68014	AMUSEMENT & RECREATION ATTENDANTS	1,161	1,237	1,586	111	660	136	425	37%
79017	ANIMAL CARETAKERS, EXC. FARM	248	259	320	22	137	26	72	29%
34017	ANNOUNCERS, RADIO & TELEVISION	251	260	289	12	60	11	38	15%
43011	APPRAISERS, REAL ESTATE	272	285	328	21	127	21	56	21%
22302	ARCHITECTS, EXC. LANDSCAPE & MARINE	754	802	1,043	69	422	86	289	38%
34035	ARTISTS & RELATED WORKERS	659	699	899	58	394	76	240	36%
93956	ASSEMBLERS/FABRICATORS -EXC. MACH., ELECT., PRECI	3,612	3,793	4,720	268	1,643	346	1,108	31%
21917	ASSESSORS	139	142	155	12	66	13	16	12%
34058	ATHLETES, COACHES, UMPIRES, & RELATED WORKERS	169	181	236	15	93	18	67	40%
24108	ATMOSPHERIC & SPACE SCIENTISTS	*	*	*	0	5	1	3	*
31508	AUDIO-VISUAL SPECIALISTS	116	151	173	11	60	11	27	18%
85305	AUTOMOTIVE BODY & RELATED REPAIRERS	1,286	1,352	1,651	92	524	106	365	28%
85302	AUTOMOTIVE MECHANICS	6,568	6,867	8,206	416	2,336	470	1,638	25%
95023	AUXILIARY EQUIPMENT OPERATORS, POWER	43	44	49	2	13	2	6	14%
68023	BAGGAGE PORTERS & BELLHOPS	667	713	886	56	282	56	219	33%
63023	BAILIFFS	78	80	87	3	16	3	9	12%
65021	BAKERS, BREAD & PASTRY	584	625	768	61	318	64	184	32%
89805	BAKERS, MANUFACTURING	387	404	464	33	161	33	77	20%
68002	BARBERS	276	294	384	28	169	35	108	39%
65005	BARTENDERS	2,891	3,099	3,916	308	1,609	332	1,025	35%
85951	BICYCLE REPAIRERS	102	108	134	8	44	9	32	31%
53508	BILL & ACCOUNT COLLECTORS	1,648	1,734	2,154	136	830	168	506	31%
55344	BILLING, COST & RATE CLERKS	1,971	2,069	2,617	177	1,201	242	646	33%

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OES CODE	OES OCCUPATIONAL TITLE	EMPLOYMENT			JOB OPPORTUNITIES			GROWTH	
		1986	1987	1991	1986-87	1986-91	1990-91	1986-91	
56002	BILLING, POSTING, & CALCULATING MACHINE OPERATORS	1,001	1,050	1,284	80	519	100	283	28%
92546	BINDERY MACHINE OPERATORS	364	380	467	21	155	30	103	28%
92525	BINDERY MACHINE SETTERS & SET-UP OPERATORS	136	141	172	9	63	13	36	26%
24308	BIOLOGICAL SCIENTISTS	203	210	234	9	55	9	31	15%
24502	BIOLOGICAL, AGRI , & FOOD TECHS , EXC. HEALTH	293	306	348	18	95	17	55	19%
87905	BLASTERS & EXPLOSIVES WORKERS	*	*	*	0	4	1	3	*
92926	BOILER OPERATORS & TENDERS, LOW PRESSURE	28	29	34	0	8	0	6	21%
89135	BOILERMAKERS	106	115	135	10	44	7	29	27%
89711	BOOKBINDERS	39	40	50	2	19	2	11	28%
55338	BOOKKEEPING, ACCOUNTING, & AUDITING CLERKS	16,791	17,677	21,714	1,596	9,344	1,918	4,923	29%
87302	BRICK MASONS	1,827	1,873	2,237	80	602	130	410	22%
34014	BROADCAST NEWS ANALYSTS	69	71	79	3	16	3	10	14%
34028	BROADCAST TECHNICIANS	135	141	159	5	32	5	24	18%
53128	BROKERAGE CLERKS	186	194	229	16	95	19	43	23%
43005	BROKERS, REAL ESTATE	498	530	614	55	257	49	116	23%
21117	BUDGET ANALYSTS	370	389	494	26	185	34	124	34%
85311	BUS & TRUCK MECHS., & DIESEL ENG. SPECIALISTS	2,468	2,600	3,145	168	947	188	677	27%
97108	BUS DRIVERS	2,434	2,575	3,132	214	1,123	229	698	29%
97111	BUS DRIVERS, SCHOOL	43	46	60	4	24	5	17	40%
65023	BUTCHERS & MEAT CUTTERS	754	799	971	61	323	64	217	29%
89311	CABINETMAKERS & BENCH CARPENTERS	1,304	1,391	1,739	109	582	112	435	33%
85914	CAMERA & PHOTOGRAPHIC EQUIPMENT REPAIRERS	*	*	*	0	4	0	3	*
34026	CAMERA OPERATORS, TELEVISION & MOTION PICTURE	46	48	55	2	12	1	9	20%
93935	CANNERY WORKERS	69	68	60	1	1-	1	9-	-13%
87102	CARPENTERS	8,651	9,076	11,007	667	3,816	780	2,356	27%
93932	CARPET CUTTERS, DIAGRAMMERS, & SEAMERS	46	47	56	2	16	3	10	22%
87602	CARPET INSTALLERS	148	156	189	7	50	9	41	28%
49023	CASHIERS	12,082	12,777	15,846	1,283	7,149	1,502	3,764	31%
87105	CEILING TILE INSTALLERS/ACCOUSTICAL CARPENTERS	186	190	226	0	27	6	40	22%
92956	CEMENTING & GLUING MACHINE OPERATORS & TENDERS	126	134	174	7	65	12	48	38%
85502	CENTRAL OFFICE & PBX INSTALLERS & REPAIRERS	365	378	418	20	91	18	53	15%
57108	CENTRAL OFFICE OPERATORS	424	439	486	42	210	42	62	15%
22114	CHEMICAL ENGINEERS	121	127	169	4	54	9	48	40%
92935	CHEMICAL EQUIPMENT CONTROLLERS & OPERATORS	42	46	47	3	10	1	5	12%
92938	CHEMICAL EQUIPMENT TENDERS	*	*	*	1	1	0	0	*
95008	CHEMICAL PLANT & SYSTEM OPERATORS	*	*	*	0	1	0	0	*
24505	CHEMICAL TECHS., EXC. HEALTH	177	188	213	10	53	6	36	20%
24105	CHEMISTS, EXC. BIOCHEMISTS	223	236	276	10	78	10	53	24%
68038	CHILD CARE WORKERS	1,650	1,747	2,225	201	1,186	252	575	35%
22502	CIVIL ENGINEERING TECHNICIANS & TECHNOLOGISTS	756	788	926	50	297	58	170	22%
22121	CIVIL ENGINEERS, INCLUDING TRAFFIC	1,648	1,731	2,115	128	752	152	467	28%
21921	CLAIMS EXAMINERS, PROPERTY & CASUALTY INSURANCE	280	294	347	18	106	20	67	24%
21502	CLAIMS TAKERS, UNEMPLOYMENT BENEFITS	25	26	28	1	7	1	3	12%
92958	CLEANING, WASHING, & PICKLING EQUIPMENT OPERS	64	67	63	3	5	0	1-	-2%
27502	CLERGY	44	45	56	2	19	3	12	27%
92951	COATING & PAINTING MACHINE SET-UP OPERATORS	238	254	341	14	135	26	103	43%
92953	COATING, PAINTING, & SPRAYING MACHINE OPERS.	383	401	478	23	143	24	95	25%
93908	COIL WINDERS, TAPERS, & FINISHERS	109	115	157	6	64	11	48	44%
85947	COIN & VENDING MACHINE SERVICERS & REPAIRERS	292	305	364	18	106	21	72	25%

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		1986	1987	1991	1986-87	1986-91	1990-91	1986-91	
91505	COMBINATION MACH. TOOL SET-UP OPERS.-MTL./PLAST.	150	161	192	11	57	10	42	28%
91508	COMBINATION MACHINE TOOL OPERS. - METAL & PLASTIC	82	86	112	2	39	3	30	37%
65041	COMBINED FOOD PREPARATION & SERVICE WORKERS	13,359	14,348	18,210	1,577	8,236	1,727	4,851	36%
21911	COMPLIANCE & ENFORCE. INSPECTORS, EXC. CONST.	1,045	1,072	1,189	59	326	63	144	14%
56011	COMPUTER OPERATORS, EXC. PERIPHERAL EQUIPMENT	1,986	2,090	2,569	122	835	151	583	29%
25108	COMPUTER PROGRAMMER AIDES	487	517	643	30	200	36	156	32%
25105	COMPUTER PROGRAMMERS	2,921	3,076	3,728	162	976	179	807	28%
87311	CONCRETE & TERRAZZO FINISHERS	2,313	2,409	2,886	133	785	162	573	25%
21908	CONSTRUCTION & BUILDING INSPECTORS	307	318	358	17	112	19	51	17%
98300	CONSTRUCTION & EXTRACTION WORKER HELPERS	174	184	209	11	57	10	35	20%
15017	CONSTRUCTION MANAGERS	4,690	4,925	5,908	348	1,906	381	1,218	26%
97951	CONVEYOR OPERATORS & TENDERS	235	246	264	14	60	10	29	12%
92917	COOKING MACHINE OPERATORS & TENDERS, FOOD	36	36	30	0	2-	0	6-	-17%
65028	COOKS, INSTITUTION OR CAFETERIA	1,627	1,710	2,072	137	777	154	445	27%
65026	COOKS, RESTAURANT	5,105	5,477	6,917	558	2,906	603	1,812	35%
65035	COOKS, SHORT ORDER	105	111	138	8	49	9	33	31%
65032	COOKS, SPECIALTY FAST FOOD	1,920	2,060	2,609	206	1,097	226	689	36%
92928	COOLING & FREEZING EQUIP. OPERS. & TENDERS	*	*	*	0	2-	0	3-	*
63017	CORRECTION OFFICERS & JAILERS	964	987	1,077	75	387	77	113	12%
32311	CORRECTIVE & MANUAL ARTS THERAPISTS	*	*	*	0	9	0	7	*
55317	CORRESPONDENCE CLERKS	263	275	329	23	140	26	66	25%
21902	COST ESTIMATORS	1,548	1,630	1,987	147	876	171	439	28%
49017	COUNTER & RENTAL CLERKS	1,628	1,733	2,269	181	1,098	235	641	39%
65017	COUNTER ATTDTS. - LUNCHROOM, COFFEE SHOP, & CAFE.	2,818	2,993	3,706	327	1,779	371	888	32%
53702	COURT CLERKS	219	223	244	16	85	17	25	11%
97944	CRANE & TOWER OPERATORS	171	179	197	9	38	7	26	15%
21105	CREDIT ANALYSTS	328	342	413	30	177	34	85	26%
53114	CREDIT AUTHORIZERS	380	398	491	34	218	43	111	29%
53117	CREDIT CHECKERS	349	366	457	30	206	41	108	31%
63044	CROSSING GUARDS	*	*	*	0	0	0	0	*
92965	CRUSHING, GRINDING, & MIXING MACHINE OPERATORS	1,266	1,333	1,600	92	516	104	334	26%
31511	CURATORS, ARCHIVISTS, & MUSEUM TECHNICIANS	38	39	49	2	16	2	11	29%
89505	CUSTOM TAILORS & SEWERS	316	335	457	27	215	45	141	45%
55335	CUSTOMER SERVICE REPRESENTATIVES, UTILITIES	1,107	1,146	1,266	96	469	95	159	14%
93926	CUTTERS & TRIMMERS, HAND	82	88	109	3	35	4	27	33%
92941	CUTTING & SLICING MACH. SETTERS & SET-UP OPERS.	*	*	*	0	4	0	3	*
92944	CUTTING & SLICING MACHINE OPERATORS & TENDERS	235	240	259	6	51	9	24	10%
92932	DAIRY PROCESSING EQUIP. OPERS., INCL. SETTERS	44	43	38	1	0	1	6-	-14%
56017	DATA ENTRY KEYERS, EXC. COMPOSING	4,082	4,307	5,397	270	1,729	342	1,315	32%
56021	DATA KEYERS, COMPOSING	777	810	970	70	453	89	193	25%
85705	DATA PROCESSING EQUIPMENT REPAIRERS	1,030	1,091	1,277	72	321	60	247	24%
49032	DEMONSTRATORS, PROMOTERS, & MODELS	251	264	351	23	160	33	100	40%
66002	DENTAL ASSISTANTS	1,435	1,501	1,850	160	947	203	415	29%
32908	DENTAL HYGIENISTS	669	700	865	67	399	85	196	29%
32105	DENTISTS	752	788	972	51	319	67	220	29%
34038	DESIGNERS, EXC. INTERIOR DESIGNERS	1,392	1,479	1,891	99	643	124	499	36%
63035	DETECTIVES & INVESTIGATORS, EXC. PUBLIC	200	212	280	14	95	19	80	40%
32523	DIETETIC TECHNICIANS	139	144	181	11	80	15	42	30%
32521	DIETITIANS & NUTRITIONISTS	229	238	288	16	118	23	59	26%

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		1986	1987	1991	1986-87	1986-91	1990-91	1986-91	
65014	DINING ROOM/CAFETERIA ATTENDTS. & BARTDR. HELPERS	5,828	5,713	7,197	451	2,284	459	1,869	35%
27505	DIRECTORS, RELIGIOUS ACTIVITIES & EDUCATION	45	47	62	4	30	5	17	38%
57105	DIRECTORY ASSISTANCE OPERATORS	401	415	459	40	197	40	58	14%
58005	DISPATCHERS - EXC. POLICE, FIRE, & AMBULANCE	1,392	1,468	1,801	88	557	102	409	29%
58002	DISPATCHERS-POLICE, FIRE, & AMBULANCE	322	331	370	18	94	18	48	15%
22514	DRAFTERS	4,007	4,238	5,500	282	1,919	395	1,493	37%
97926	DRAGLINE OPERATORS	*	*	*	0	6	1	4	*
91108	DRILL./BORING MACH. SET-UP OPERS. - MTL. & PLAST.	196	209	253	16	82	11	57	29%
97117	DRIVING SALES WORKERS	6,455	6,762	8,183	418	2,318	484	1,728	27%
87108	DRYWALL INSTALLERS	1,322	1,354	1,655	48	429	95	333	22%
56005	DUPLICATING MACHINE OPERATORS	173	182	235	15	112	18	62	36%
87902	EARTH DRILLERS, EXC. OIL & GAS	65	66	79	1	19	3	14	22%
27102	ECONOMISTS, INCLUDING MARKET RESEARCH ANALYSTS	162	173	209	9	67	12	47	29%
15005	EDUCATION ADMINISTRATORS	106	112	147	6	57	10	41	39%
85711	ELECTRIC HOME APPLIANCE & POWER TOOL REPAIRERS	340	359	464	26	175	35	124	36%
85911	ELECTRIC METER INSTALLERS & REPAIRERS	55	57	64	2	13	2	9	16%
85714	ELECTRIC MOTOR, TRANSFORMER, & REL. REPAIRERS	645	678	826	45	259	53	181	28%
93905	ELECTRICAL & ELECTRONIC ASSEMBLERS	1,408	1,488	2,014	115	829	179	606	43%
22505	ELECTRICAL & ELECTRONIC ENGINEERING TECHS.	6,827	7,188	9,665	437	3,371	730	2,838	42%
22126	ELECTRICAL & ELECTRONIC ENGINEERS	8,101	8,565	11,329	566	3,884	830	3,228	40%
85723	ELECTRICAL POWERLINE INSTALLERS & REPAIRERS	107	112	126	4	29	5	19	18%
93114	ELECTRICAL/ELECTRONIC EQUIP. ASSEMBLERS - PREC.	8,935	9,394	13,650	860	7,143	1,639	4,715	53%
87202	ELECTRICIANS	4,714	4,921	5,806	300	1,676	338	1,092	23%
32926	ELECTROCARDIOGRAPH TECHS	135	143	175	10	66	13	40	30%
32923	ELECTROENCEPHALOGRAPH TECHNICIANS & TECHNOLOGISTS	83	86	101	5	32	6	18	22%
91921	ELECTROLYTIC COATING MACH. OPERS - METAL/PLASTIC	226	242	287	18	94	17	61	27%
91917	ELECTROLYTIC COATING MACH. SET-UP OPRS.-MTL. & PL.	293	311	412	21	163	33	119	41%
93111	ELECTROMECH. EQUIP. ASSEMBLERS - PRECISION	529	563	751	53	357	74	222	42%
85908	ELECTROMEDICAL & BIOMEDICAL EQUIPMENT REPAIRERS	52	54	65	3	18	3	13	25%
85708	ELECTRONIC HOME ENTERTAINMENT EQUIPMENT REPAIRERS	338	359	459	24	151	29	121	36%
92902	ELECTRONIC SEMICONDUCTOR PROCESSORS	2,894	3,027	4,643	211	2,231	520	1,749	60%
85717	ELECTRONICS REPAIRERS, COMMERCIAL & IND. EQUIP.	605	633	905	34	346	77	300	50%
85932	ELEVATOR INSTALLERS & REPAIRERS	129	133	161	7	47	9	32	25%
67011	ELEVATOR OPERATORS	*	*	*	0	0	0	0	*
39014	EMBALMERS	54	57	75	4	28	6	21	39%
32508	EMERGENCY MEDICAL TECHNICIANS	259	274	337	26	156	30	78	30%
21508	EMPLOYMENT INTERVIEWERS	837	873	1,044	55	335	68	207	25%
22500	ENGINEERING & RELATED TECHNS.	198	210	264	14	90	17	66	33%
22100	ENGINEERS	105	108	129	5	32	4	24	23%
93951	ENGRAVING & PRINTING WORKERS, HAND	57	60	80	4	27	5	23	40%
22517	ESTIMATORS & DRAFTERS, UTILITIES	150	155	171	8	36	7	21	14%
97923	EXCAVATING & LOADING MACHINE OPERATORS	471	516	599	54	198	33	128	27%
87900	EXTRACTION & RELATED WORKERS - INCL. BLASTERS	75	77	87	2	18	4	12	16%
91311	EXTRUD./DRAWING MACH. SET-UP OPERS.-MTL. & PLAST.	439	417	308	12	78-	9	131-	-30%
92968	EXTRUDING/FORMING/PRESSING MACH. SET-UP OPERS.	81	82	94	2	24	4	13	16%
92971	EXTRUDING, FORMING, & PRESSING MACHINE OPERATORS	901	918	1,186	69	417	85	285	32%
89502	FABRIC & APPAREL LAYOUT & PATTERNMAKERS	*	*	*	0	7	1	6	*
73002	FALLERS & BUCKERS	38	41	49	4	16	3	11	29%
85321	FARM EQUIPMENT MECHANICS	63	66	82	3	24	4	19	30%

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87817	FENCE ERECTORS	424	433	517	20	155	33	93	22%
55321	FILE CLERKS	1,867	1,957	2,377	190	1,177	231	510	27%
34032	FILM EDITORS	*	*	*	1	10	1	5	*
25315	FINANCIAL ANALYSTS, STATISTICAL	161	168	200	7	56	7	39	24%
13002	FINANCIAL MANAGERS	4,246	4,480	5,528	299	1,927	365	1,282	30%
63008	FIRE FIGHTERS	1,208	1,238	1,354	45	235	46	146	12%
61002	FIRE FIGHTING & PREVENTION SUPERVISORS	132	135	147	5	24	5	15	11%
63002	FIRE INSPECTORS	55	56	62	1	10	1	7	13%
81017	FIRST LINE MGRS./SUPERS. - LABORERS & HELPERS	244	261	300	18	109	20	56	23%
81008	FIRST LINE MGRS./SUPERS. - PRODUCTION & OPERS.	4,066	4,267	5,325	237	1,605	329	1,259	31%
81011	FIRST LINE MGRS./SUPERS. - TRANSPORT. OPERATIVES	390	414	494	29	189	32	104	27%
81005	FIRST LINE MGRS./SUPRS.-CONST. TRADES & EXTRACT.	3,459	3,664	4,455	271	1,453	286	996	29%
81002	FIRST LINE MGRS./SUPRS.-MECHS./INSTLLRS/REPRS.	1,495	1,568	1,933	109	705	132	438	29%
61000	FIRST LINE SUPERS. & MGRS./SUPERS. - SERVICE	567	605	765	46	340	59	198	35%
41002	FIRST LINE SUPERVISORS & MANAGERS - SALES	16,539	17,434	21,558	1,427	8,200	1,703	5,019	30%
72002	FIRST LINE SUPERVISORS - AGRI., FORESTRY, & REL.	34	37	43	3	14	2	9	26%
51002	FIRST LINE SUPERVISORS-CLERICAL & ADMIN. SUPPORT	5,840	6,133	7,498	422	2,645	518	1,658	28%
63041	FISH & GAME WARDENS	*	*	*	0	0	0	0	*
93108	FITTERS, STRUCTURAL METAL - PRECISION	186	195	224	13	64	11	38	20%
68026	FLIGHT ATTENDANTS	442	476	617	64	355	76	175	40%
87605	FLOOR LAYERS, EXC. CARPET, WOOD, & HARD TILES	45	46	54	1	11	2	9	20%
87608	FLOOR SANDING MACHINE OPERATORS	29	29	35	0	8	1	6	21%
65000	FOOD & BEVERAGE SERVICE OCCUPATIONS	867	922	1,125	84	467	90	258	30%
89808	FOOD BATCHMAKERS	115	113	98	2	5-	1-	17-	-15%
65038	FOOD PREPARATION WORKERS	9,361	9,955	12,291	996	5,252	1,093	2,930	31%
65011	FOOD SERVERS, OUTSIDE	584	614	755	41	246	51	171	29%
15026	FOOD SERVICE & LODGING MANAGERS	4,771	5,120	6,456	515	2,701	553	1,685	35%
79002	FOREST & CONSERVATION WORKERS	31	31	34	1	5	1	3	10%
24302	FORESTERS & CONSERVATION SCIENTISTS	94	97	110	4	24	5	16	17%
91317	FORGING MACH. SET-UP OPERS. - METAL & PLASTIC	*	*	*	1	14	3	12	*
91914	FOUNDRY MOLD ASSEMBLY & SHAKEOUT WORKERS	55	52	38	1	11-	2-	17-	-31%
85505	FRAME WIRERS, CENTRAL OFFICE	513	530	587	24	110	20	74	14%
98700	FREIGHT, STOCK, & MATERIAL MOVERS, HAND	1,745	1,826	2,206	103	700	131	461	26%
68041	FUNERAL ATTENDANTS	74	79	103	8	50	10	29	39%
39011	FUNERAL DIRECTORS & MORTICIANS	95	101	133	8	49	10	38	40%
91935	FURNACE OPERATORS & TENDERS	37	38	32	1	3-	0	5-	-14%
92923	FURNACE, KILN, OVEN, DRIER, OR KETTLE OPERS	127	131	158	6	50	8	31	24%
89314	FURNITURE FINISHERS	132	140	175	6	49	7	43	33%
79014	GARDENERS & GROUNDSKEEPERS, EXC. FARM	2,971	3,167	3,894	321	1,700	340	923	31%
85944	GAS APPLIANCE REPAIRERS	37	39	51	2	18	3	14	38%
89926	GEM & DIAMOND WORKERS	*	*	*	1	11	2	9	*
19005	GENERAL MANAGERS & TOP EXECUTIVES	11,261	11,884	14,709	873	5,299	1,054	3,448	31%
55347	GENERAL OFFICE CLERKS	20,568	21,606	26,376	2,045	11,764	2,449	5,808	28%
24111	GEOLOGISTS, GEOPHYSICISTS, & OCEANOGRAPHERS	104	107	128	2	27	5	24	23%
87811	GLAZIERS	487	500	598	22	170	36	111	23%
93911	GLAZIERS, MANUFACTURING	35	37	43	2	11	1	8	23%
97938	GRADER, DOZER, & SCRAPER OPERATORS	320	344	404	30	132	24	84	26%
79011	GRADERS & SORTERS, AGRICULTURAL PRODUCTS	*	*	*	1	0	0	4-	*
31117	GRADUATE ASSISTANTS, TEACHING	1,385	1,442	1,643	96	468	95	258	19%

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91114	GRIND. & BUFF. MACH. SET-UP OPERS - METAL/PLAST.	409	437	500	29	128	23	91	22%
93953	GRINDING & POLISHING WORKERS, HAND	301	323	406	25	148	28	105	35%
63047	GUARDS & WATCH GUARDS	7,301	7,736	9,919	514	3,178	653	2,618	36%
68017	GUIDES	50	54	71	5	34	6	21	42%
68005	HAIRDRESSERS, HAIRSTYLISTS, & COSMETOLOGISTS	3,992	4,257	5,553	514	3,043	660	1,561	39%
98902	HAND PACKERS & PACKAGERS	1,195	1,254	1,460	82	431	78	265	22%
93000	HAND WORKING, INC. ASSEMBLERS & FABRICATORS	236	251	314	20	113	22	78	33%
87308	HARD TILE SETTERS	381	390	465	17	123	26	84	22%
92305	HEAD SAWYERS	*	*	*	0	3	0	2	*
32000	HEALTH PRACTITIONERS, TECHNICIANS, & RELATED	56	59	72	4	29	5	16	29%
91932	HEAT TREATING/TEMPERING MACH. OPERS -MTL /PLAST.	87	91	100	4	24	5	13	15%
91938	HEATERS, METAL & PLASTIC	*	*	*	0	1-	0	1-	*
91928	HEATING EQUIP. SET-UP OPERS. - METAL & PLASTIC	*	*	*	0	6	0	5	*
85902	HEATING, AIR COND., & REFRIG. MECHS. & INSTALLERS	2,274	2,355	2,895	120	888	184	621	27%
98319	HELPERS - ALL OTHER CONSTRUCTION TRADES	1,494	1,550	1,782	66	500	96	288	19%
98311	HELPERS - BRICK & STONE MASONS	1,554	1,592	1,911	58	473	102	357	23%
98312	HELPERS - CARPENTERS & RELATED	2,197	2,350	2,894	178	865	170	697	32%
98313	HELPERS - ELECTRICIANS & POWERLINE INSTALLERS	892	917	1,092	48	331	70	200	22%
98323	HELPERS - EXTRACTIVE WORKERS	*	*	*	0	5	0	4	*
98314	HELPERS - PAINTERS, PAPERHANGERS, & PLASTERERS	651	666	797	21	193	41	146	22%
98315	HELPERS - PLUMBERS, PIPEFITTERS, & STEAMFITTERS	1,174	1,203	1,432	43	345	74	258	22%
98316	HELPERS - ROOFERS	304	309	369	9	87	19	65	21%
98000	HELPERS, LABORERS, & MATERIAL MOVERS, HAND	76	80	98	4	31	6	22	29%
87711	HIGHWAY MAINTENANCE WORKERS	472	483	527	23	122	23	55	12%
97941	HOIST & WINCH OPERATORS	92	95	109	2	25	2	17	18%
66011	HOME HEALTH AIDES	218	231	299	17	112	22	81	37%
65002	HOSTS/HOSTESSES - RESTAURANT/LOUNGE/COFFEE SHOP	1,685	2,024	2,553	235	1,250	260	668	35%
53808	HOTEL DESK CLERKS	918	978	1,185	106	531	109	267	29%
61008	HOUSEKEEPERS	520	552	683	47	270	53	163	31%
22508	INDUSTRIAL ENGINEERING TECHS	275	293	387	19	150	26	112	41%
22128	INDUSTRIAL ENGINEERS, EXC. SAFETY	1,533	1,636	2,104	119	723	143	571	37%
15014	INDUSTRIAL PRODUCTION MANAGERS	1,568	1,663	2,066	121	734	146	498	32%
97947	INDUSTRIAL TRUCK & TRACTOR OPERATORS	1,738	1,815	2,115	91	522	98	377	22%
83000	INSPECTORS & RELATED OCCUPATIONS	38	40	48	2	15	2	10	26%
85938	INSTALLERS/REPAIRERS MANUFACTURED BLDGS /DWELLING	167	175	213	9	65	9	46	28%
31517	INSTRUCTIONAL COORDINATORS	34	35	49	1	17	2	15	44%
31321	INSTRUCTORS & COACHES, SPORTS & PHYSICAL TRAINING	935	996	1,295	81	496	99	360	39%
31317	INSTRUCTORS, NONVOCATIONAL EDUCATION	475	496	598	27	189	34	123	26%
87802	INSULATION WORKERS	651	663	789	16	172	37	138	21%
53302	INSURANCE ADJUSTERS, EXAMINERS, & INVESTIGATORS	1,270	1,333	1,567	90	477	95	297	23%
53305	INSURANCE APPRAISERS, AUTO DAMAGE	69	75	86	6	33	5	17	25%
53311	INSURANCE CLAIMS CLERKS	707	738	866	67	360	73	159	22%
53308	INSURANCE EXAMINING CLERKS	140	148	172	10	70	11	32	23%
53314	INSURANCE POLICY PROCESSING CLERKS	1,150	1,209	1,417	119	599	122	267	23%
34041	INTERIOR DESIGNERS	52	55	72	2	21	3	20	38%
55332	INTERVIEWING CLERKS, EXC. PERSONNEL & WELFARE	1,571	1,660	2,134	146	905	195	563	36%
53505	INVESTIGATORS, CLERICAL	286	304	400	27	172	37	114	40%
67005	JANITORS & CLEANERS, EXC. MAIDS & HOUSEKEEPING	13,916	14,676	18,202	1,323	7,683	1,589	4,286	31%
89123	JEWELERS & SILVERSMITHS	227	241	303	21	132	27	76	33%

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89705	JOB PRINTERS	119	123	151	8	55	10	32	27%
28102	JUDGES & MAGISTRATES	174	178	196	15	82	15	22	13%
22308	LANDSCAPE ARCHITECTS	70	74	91	3	31	4	21	30%
91105	LATHE/TURNING MACH. SET-UP OPERS.- MTL. & PLAST	367	394	463	33	158	26	96	26%
87114	LATHERS	755	771	920	26	234	51	165	22%
92726	LAUNDRY/DRYCLEANING MACH. OPERS., EXC. PRESSING	1,491	1,585	2,019	127	726	152	528	35%
28302	LAW CLERKS	271	284	351	18	118	23	80	30%
28108	LAWYERS	3,355	3,548	4,477	270	1,616	334	1,122	33%
31111	LECTURERS	60	64	83	5	29	6	23	38%
28300	LEGAL ASSISTANTS & TECHNICIANS, EXC. CLERICAL	50	52	70	5	34	6	20	40%
55102	LEGAL SECRETARIES	2,202	2,345	3,063	265	1,571	339	861	39%
92515	LETTER PRESS SETTERS & SET-UP OPERATORS	387	404	491	22	144	29	104	27%
31502	LIBRARIANS, PROFESSIONAL	821	853	967	71	381	76	146	18%
53902	LIBRARY ASSISTANTS & BOOKMOBILE DRIVERS	717	741	840	42	225	43	123	17%
53708	LICENSE CLERKS	239	245	267	17	93	19	28	12%
32505	LICENSED PRACTICAL NURSES	3,988	4,191	5,245	408	2,471	530	1,257	32%
24300	LIFE SCIENTISTS	*	*	*	0	1	0	1	*
53121	LOAN & CREDIT CLERKS	1,920	2,005	2,369	181	998	204	449	23%
53111	LOAN INTERVIEWERS	188	197	234	13	76	13	46	24%
21108	LOAN OFFICERS & COUNSELORS	1,176	1,231	1,454	78	440	87	278	24%
85923	LOCKSMITHS & SAFE REPAIRERS	69	74	94	5	33	6	25	36%
97305	LOCOMOTIVE ENGINEERS	26	28	37	3	19	3	11	42%
97311	LOCOMOTIVE FIRERS	*	*	*	0	5	1	4	*
79008	LOG GRADERS & SCALERS	*	*	*	1	4	0	3	*
73011	LOGGING TRACTOR OPERATORS	*	*	*	2	9	1	7	*
91117	MACH. TOOL CUTTING OPERS./TENDERS -MTL. & PLAST.	1,465	1,565	1,906	114	542	101	441	30%
93902	MACHINE ASSEMBLERS	471	506	609	46	210	40	138	29%
93105	MACHINE BUILDERS & ASSEMBLERS	731	782	987	63	345	69	256	35%
98502	MACHINE FEEDERS & OFFBEARERS	598	632	725	37	204	34	127	21%
91321	MACHINE FORMING OPERS./TENDERS - METAL & PLASTIC	574	603	739	39	244	45	165	29%
91000	MACHINE SETTERS, OPERATORS, & TENDERS	336	356	455	27	162	34	119	35%
85118	MACHINERY MAINT. MECHS., WATER/POWER GENER. PLANT	231	236	261	8	54	8	30	13%
85110	MACHINERY MAINTENANCE MECHANICS	1,181	1,159	1,434	55	439	87	323	29%
85112	MACHINERY MAINTENANCE MECHANICS, TEXTILES	*	*	*	0	4	0	3	*
85116	MACHINERY MAINTENANCE MECHS., MARINE EQUIP	37	40	48	2	15	3	11	30%
85113	MACHINERY MAINTENANCE MECHS., SEWING MACHINES	*	*	*	0	3	0	2	*
85128	MACHINERY MAINTENANCE WORKERS	196	208	250	10	77	12	54	28%
89108	MACHINISTS	3,409	3,620	4,284	276	1,329	258	875	26%
67002	MAIDS & HOUSEKEEPING CLEANERS	4,559	4,834	5,914	537	2,858	600	1,355	30%
57302	MAIL CLERKS, EXC. MAIL MACH. OPERS. & POSTAL SERV.	1,022	1,076	1,340	88	518	108	318	31%
56008	MAIL MACHINE OPERATORS, PREPARATION & HANDLING	237	248	308	21	156	29	71	30%
97914	MAIN LINE STATION ENGINEERS	*	*	*	0	2	0	2	*
85132	MAINTENANCE REPAIRERS, GENERAL UTILITY	7,225	7,611	9,168	487	2,780	530	1,943	27%
21905	MANAGEMENT ANALYSTS	120	127	159	11	73	14	39	33%
68008	MANICURISTS	371	396	517	46	283	59	146	39%
13011	MARKETING, ADVERTISING, & PUBLIC REL. MGRS.	1,772	1,872	2,462	125	1,001	192	690	39%
58021	MARKING CLERKS	571	602	806	58	405	90	235	41%
25310	MATHEMATICAL SCIENTISTS	31	32	35	2	5	2	4	13%
25323	MATHEMATICAL TECHNICIANS	*	*	*	0	1	0	1	*

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		1986	1987	1991	1986-87	1986-91	1990-91	1986-91	
93938	MEAT, POULTRY, & FISH CUTTERS - HAND	60	59	52	1	1-	1	8-	-13%
98102	MECHANIC & REPAIRER HELPERS	355	379	469	23	159	28	114	32%
85928	MECHANICAL CONTROL & VALVE INSTALLERS & REPAIRERS	31	31	35	0	4	0	4	13%
22511	MECHANICAL ENGINEERING TECHS.	905	967	1,235	60	364	65	330	36%
22135	MECHANICAL ENGINEERS	2,039	2,187	2,712	136	827	154	673	33%
32905	MEDICAL & CLINICAL LABORATORY TECHNICIANS	841	882	1,087	65	406	85	246	29%
32902	MEDICAL & CLINICAL LABORATORY TECHNOLOGISTS	1,040	1,088	1,340	90	555	116	300	29%
89923	MEDICAL APPLIANCE MAKERS	*	*	*	1	0	1	4	*
66005	MEDICAL ASSISTANTS	4,490	1,560	1,925	150	898	191	435	29%
32911	MEDICAL RECORDS TECHNICIANS & TECHNOLOGISTS	268	280	343	25	162	32	75	28%
24311	MEDICAL SCIENTISTS	33	34	42	2	13	2	9	27%
58105	MEDICAL SECRETARIES	1,271	1,329	1,640	127	761	162	369	29%
15008	MEDICINE & HEALTH SERVICES MANAGERS	1,098	1,148	1,421	77	498	103	323	29%
85986	MENDERS - GARMENTS, LINENS, & RELATED	59	62	72	2	22	3	13	22%
34044	MERCHANDISE DISPLAYERS & WINDOW TRIMMERS	115	120	164	10	81	16	49	43%
57311	MESSENGERS	460	480	598	33	206	40	138	30%
91714	METAL FABRICATORS, STRUCTURAL METAL PRODUCTS	532	551	647	24	166	32	115	22%
91911	METAL MOLDING/COREMAKING/CASTING MACH. OPERS	*	*	*	0	3	0	2	*
91908	METAL MOLDING/COREMAKING/CASTING MACH. SET-UP	33	34	38	2	8	1	5	15%
93911	METAL POURERS & CASTERS, BASIC SHAPES	*	*	*	0	6-	1-	7-	*
22105	METALLURGICAL & MATERIALS ENGINEERS	55	55	59	1	4	2	4	7%
58014	METER READERS, UTILITIES	427	441	487	21	97	19	60	14%
91111	MILL./PLANING MACH. SET-UP OPERS. - MIL. & PLAST	178	193	232	17	85	14	54	30%
85123	MILLWRIGHTS	176	193	229	20	81	12	53	30%
22108	MINING ENGINEERS, INCLUDING MINE SAFETY	*	*	*	0	4	0	3	*
15021	MINING, QUARRYING, & DRILLING MANAGERS	*	*	*	0	1	0	1	*
85314	MOBILE HEAVY EQUIP. MECHANICS, EXC. ENGINES	242	267	314	21	85	9	72	30%
93944	MOLDERS & CASTERS, HAND	192	197	224	7	53	11	32	17%
92908	MOTION PICTURE PROJECTIONISTS	80	86	112	9	58	12	32	40%
85308	MOTORCYCLE REPAIRERS	*	*	*	1	8	1	7	*
53705	MUNICIPAL CLERKS	*	*	*	1	5	1	2	*
34047	MUSIC DIRECTORS, SINGERS, COMPOSERS, & RELATED	*	*	*	0	1	0	1	*
85921	MUSICAL INSTRUMENT REPAIRERS & TUNERS	39	41	51	3	16	3	12	31%
34051	MUSICIANS, INSTRUMENTAL	572	610	794	58	338	71	222	39%
53105	NEW ACCOUNTS CLERKS	698	720	863	75	420	87	165	24%
49026	NEWS VENDORS, PHONE SOLIC., DOOR-TO-DOOR SALES	473	499	644	47	301	63	171	36%
91926	NONELECTROLYTIC COATING MACH. OPERS -MEL /PLAST	91	66	76	4	24	3	15	25%
91923	NONELECTROLYTIC COATING MACH. SET-UP MIL /PLAST	*	*	*	0	6	0	6	*
22117	NUCLEAR ENGINEERS	*	*	*	0	5	1	5	*
32914	NUCLEAR MEDICINE TECHNOLOGISTS	216	224	274	15	104	21	58	27%
24508	NUCLEAR TECHNICIANS & TECHNOLOGISTS	28	29	39	2	16	3	11	39%
91502	NUMERICAL CONTROL MACH. TOOL OPERS -METAL/PLAST	470	505	595	44	206	36	125	27%
66008	NURSING AIDES, ORDERLIES, & ATTENDANTS	5,092	5,329	6,567	505	2,992	644	1,475	29%
31114	NURSING INSTRUCTORS	128	134	166	8	51	10	37	29%
32305	OCCUPATIONAL THERAPISTS	166	175	211	9	76	12	45	27%
66021	OCCUPATIONAL THERAPY ASSISTANTS & AIDES	234	245	302	23	140	29	68	29%
85926	OFFICE MACHINE & CASH REGISTER SERVICERS	515	539	656	34	203	42	141	27%
92512	OFFSET LITHO. PRESS SETTERS & SET-UP OPERS.	430	448	550	33	210	42	120	28%
97950	OPERATING ENGINEERS	1,711	1,917	2,244	241	753	127	533	31%

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25302	OPERATIONS & SYSTEMS ANALYSTS, EXC. COMPUTER	543	573	774	28	249	48	231	43%
32514	OPTICIANS, DISPENSING & MEASURING	311	328	414	24	162	32	103	33%
32108	OPTOMETRISTS	154	161	199	11	75	15	45	29%
55323	ORDER CLERKS-MATERIALS, MERCHANDISE, & SERVICE	2,225	2,337	2,919	194	1,306	266	694	31%
58026	ORDER FILLERS, WHOLESALE & RETAIL SALES	1,720	1,802	2,192	103	615	126	472	27%
49008	OTHER SALES REPRESENTATIVES, EXC. RETAIL	3,726	3,905	4,850	286	1,917	386	1,124	30%
92974	PACKAGING & FILLING MACHINE OPERS. & TENDERS	1,190	1,224	1,347	60	316	62	157	13%
87402	PAINTERS & PAPERHANGERS - CONST. & MAINTEN.	2,603	2,679	3,208	140	1,019	211	605	23%
92947	PAINTERS, TRANSPORTATION EQUIPMENT	341	359	437	25	145	28	96	28%
93947	PAINTING, COATING, & DECORATING WORKERS, HAND	216	228	291	11	98	15	75	35%
92914	PAPER GOODS MACHINE SETTERS & SET-UP OPERATORS	137	142	170	7	52	10	33	24%
28305	PARALEGAL PERSONNEL	597	633	819	49	308	63	222	37%
63021	PARKING ENFORCEMENT OFFICERS	*	*	*	0	0	0	0	*
97808	PARKING LOT ATTENDANTS	140	149	193	11	69	13	53	38%
89114	PATTERN & MODEL MAKERS, METAL	*	*	*	0	3	0	2	*
89302	PATTERN & MODEL MAKERS, WOOD (EXC. CARPENTERS)	*	*	*	0	1-	0	1-	*
89305	PATTERN MAKERS, WOOD	*	*	*	0	3	0	2	*
87708	PAVING, SURFACING, & TAMPING EQUIP. OPERS.	307	327	384	25	121	21	77	25%
55341	PAYROLL & TIMEKEEPING CLERKS	1,196	1,255	1,529	74	582	90	333	28%
56014	PERIPHERAL EDP EQUIPMENT OPERATORS	1,233	1,285	1,505	104	647	120	272	22%
55314	PERSONNEL CLERKS, EXC. PAYROLL & TIMEKEEPING	845	884	1,076	69	515	91	231	27%
13005	PERSONNEL, TRAINING, & LABOR RELATIONS MGRS.	822	871	1,097	41	377	60	275	33%
21511	PERSONNEL, TRAINING, & LABOR RELATIONS SPECIALIST	2,322	2,434	3,097	151	1,115	222	775	33%
67008	PEST CONTROLLERS & ASSISTANTS	603	640	842	53	334	71	239	40%
22111	PETROLEUM ENGINEERS	*	*	*	0	1	0	0	*
32517	PHARMACISTS	1,168	1,233	1,527	124	705	147	359	31%
66026	PHARMACY ASSISTANTS	284	297	370	28	171	34	86	30%
92545	PHOTOENGRAVING & LITHOGRAPHING MACHINE OPERS	165	175	228	12	87	17	63	38%
92521	PHOTOENGRAVING & LITHOGRAPHING PHOTOGRAPHERS	134	139	170	5	43	7	36	27%
34023	PHOTOGRAPHERS	374	395	499	26	171	32	125	33%
92908	PHOTOGRAPHIC PROCESSING MACH. OPERS. & TENDERS	520	554	727	45	289	61	207	40%
66017	PHYSICAL & CORRECTIVE THERAPY ASSISTS./AIDES	468	490	609	46	284	59	141	30%
24500	PHYSICAL & LIFE SCIENCE TECHNS.	*	*	*	0	0	0	0	*
24100	PHYSICAL SCIENTISTS	*	*	*	0	0	0	0	*
32308	PHYSICAL THERAPISTS	432	450	554	31	208	41	122	28%
32511	PHYSICIAN ASSISTANTS	413	434	532	38	244	51	119	29%
32102	PHYSICIANS & SURGEONS	3,284	3,430	4,212	261	1,581	333	928	28%
24102	PHYSICISTS & ASTRONOMERS	25	27	38	0	14	2	13	52%
87705	PILE DRIVING OPERATORS	*	*	*	0	0	0	0	*
87508	PIPELAYERS	478	547	632	81	230	36	154	32%
87505	PIPELAYING FITTERS	*	*	*	3	9	1	7	*
95000	PLANT & SYSTEM OCCUPATIONS	26	28	37	2	14	2	11	42%
87317	PLASTERERS & STUCCO MASONS	1,103	1,125	1,341	35	314	69	238	22%
91905	PLASTIC MOLDING & CASTING MACH. OPERS. & TENDERS	556	567	663	26	202	43	107	19%
91902	PLASTIC MOLDING & CASTING MACHINE SET-UP OPERS.	175	182	223	9	68	13	48	27%
87502	PLUMBERS, PIPEFITTERS, & STEAMFITTERS	3,633	3,802	4,522	248	1,364	274	889	24%
32111	PODIATRISTS	39	41	50	2	19	3	11	28%
61005	POLICE & DETECTIVE SUPERVISORS	730	748	818	26	138	26	88	12%
63011	POLICE DETECTIVES	359	368	414	11	79	14	55	15%

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63014	POLICE PATROL OFFICERS	2,761	2,829	3,086	103	519	103	325	12%
93928	PORTABLE MACHINE CUTTERS	*	*	*	0	5	0	4	*
57305	POSTAL MAIL CARRIERS	3,761	3,859	4,438	180	1,111	236	677	18%
57308	POSTAL SERVICE CLERKS	423	434	499	23	144	30	76	18%
15002	POSTMASTERS & MAIL SUPERINTENDENTS	30	31	36	2	15	3	6	20%
95028	POWER DISTRIBUTORS & DISPATCHERS	*	*	*	1	4	0	2	*
95021	POWER GENERATING PLANT OPERS., EXC. AUX. EQUIP.	69	71	78	3	20	3	9	13%
95026	POWER REACTOR OPERATORS	162	171	206	10	61	11	44	27%
89702	PRECISION COMPOSITORS/TYPESETTERS/ARRANGERS	155	161	195	10	67	12	40	26%
89921	PRECISION DENTAL LABORATORY TECHNICIANS	348	364	449	26	162	34	101	29%
89911	PRECISION DETAIL DESIGN DECORATORS & PAINTERS	101	107	135	4	45	8	34	34%
89128	PRECISION ETCHERS & ENGRAVERS	*	*	*	0	7	1	6	*
89902	PRECISION FOUNDRY MOLD & CORE MAKERS	124	117	86	2	29-	7-	38-	-31%
89126	PRECISION HAND WORKERS, JEWELRY & RELATED	42	45	61	4	27	5	19	45%
83002	PRECISION INSPECTORS, TESTERS, & GRADERS	3,313	3,520	4,631	290	1,842	384	1,318	40%
89105	PRECISION INSTRUMENT MAKERS	63	66	87	5	37	8	24	38%
85905	PRECISION INSTRUMENT REPAIRERS	674	705	919	40	323	66	245	36%
89117	PRECISION LAYOUT WORKERS, METAL	125	133	152	9	39	7	27	22%
89708	PRECISION LITHOGRAPHY & PHOTOENGRAVING WORKERS	320	333	405	15	108	22	85	27%
89905	PRECISION MOLDERS/CASTERS, EXC. JEWELRY & FOUNDRY	*	*	*	0	0	0	0	*
89917	PRECISION OPTICAL GOODS WORKERS	886	940	1,267	89	592	129	381	43%
89908	PRECISION PATTERN/MODEL MAKERS	*	*	*	0	0	0	0	*
89914	PRECISION PHOTOGRAPHIC PROCESS WORKERS	88	93	123	6	50	9	35	40%
89000	PRECISION PRODUCTION OCCUPATIONS	52	55	65	1	17	3	13	25%
91305	PRESS & BRAKE MACH. SET UP OPERS - METAL/PLAST	138	147	162	9	41	7	24	17%
89517	PRESSERS, DELICATE FABRICS	123	132	172	12	72	15	49	40%
93921	PRESSERS, HAND	95	101	132	8	51	10	37	39%
92728	PRESSING MACHINE OPERS - TEXTILE & GARMENTS	380	406	526	36	215	45	146	38%
92543	PRINTING PRESS MACHINE OPERATORS & TENDERS	571	594	736	35	248	48	165	29%
92510	PRINTING PRESS MACHINE SETTERS & SET UP OPERS	55	57	83	3	35	7	28	51%
55326	PROCUREMENT CLERKS	389	406	492	14	147	21	103	26%
34056	PRODUCERS, DIRECTORS, ACTORS, & ENTERTAINERS	199	212	277	18	108	23	78	39%
83005	PRODUCTION INSPECTORS, TESTERS, & GRADERS	2,385	2,529	3,075	192	1,041	207	690	29%
58008	PRODUCTION, PLANNING, & EXPEDITING CLERKS	1,916	2,026	2,594	188	1,223	251	678	35%
25111	PROGRAMMERS - NUMERICAL, TOOL, & PROCESS	89	95	123	4	38	6	34	38%
53911	PROOFREADERS & COPY MARKERS	154	162	199	7	65	10	45	29%
15011	PROPERTY & REAL ESTATE MANAGERS & ADMIN.	1,748	1,853	2,140	158	707	136	392	22%
66014	PSYCHIATRIC AIDES	258	270	333	25	151	32	75	29%
27108	PSYCHOLOGISTS	578	601	707	29	192	35	129	22%
34008	PUBLIC RELATIONS SPECIALISTS & PUBLICITY WRITERS	531	562	693	29	247	36	162	31%
97953	PUMP OPERATORS	43	45	51	1	13	2	8	19%
91302	PUNCHING MACH. SET-UP OPERS - METAL & PLASTIC	113	120	145	5	46	6	32	28%
21305	PURCHASING AGENTS & BUYERS, FARM PRODUCTS	*	*	*	0	5-	1-	5-	*
21308	PURCHASING AGENTS, EXC. WHOLESALE/RETAIL/FARM	1,688	1,782	2,213	106	774	129	525	31%
13008	PURCHASING MANAGERS	2,103	2,207	2,761	113	936	189	658	31%
85514	RADIO MECHANICS	231	238	269	10	56	9	38	16%
39008	RADIO OPERATORS	73	75	86	4	22	4	13	18%
32921	RADIOLOGIC TECHNICIANS	504	528	651	40	256	53	147	29%
32917	RADIOLOGIC TECHNOLOGISTS	453	473	584	38	229	49	131	29%

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85317	RAIL CAR REPAIRERS	53	57	74	6	33	7	21	40%
97308	RAIL YARD ENGINEERS, DINKEY OPERATORS, & HOSTLERS	*	*	*	2	11	2	6	*
87714	RAIL-TRACK LAYING & MAINTENANCE EQUIP. OPERATORS	*	*	*	1	4	1	3	*
63038	RAILROAD & TRANSIT POLICE & SPECIAL AGENTS	*	*	*	0	1	0	1	*
97317	RAILROAD BRAKE, SIGNAL & SWITCH OPERATORS	80	86	112	8	44	9	32	40%
53914	REAL ESTATE CLERKS	299	315	365	31	150	29	66	22%
55305	RECEPTIONISTS & INFORMATION CLERKS	6,140	6,481	8,065	606	3,683	752	1,925	31%
27311	RECREATION WORKERS	854	889	1,033	58	335	63	179	21%
32317	RECREATIONAL THERAPISTS	70	73	90	4	33	6	20	29%
85126	REFRACTORY MATLS. REPAIRERS, EXC. BRICK MASONS	*	*	*	0	2-	0	3-	*
98705	REFUSE COLLECTORS	174	182	215	9	53	10	41	24%
32502	REGISTERED NURSES	12,221	12,790	15,755	1,132	6,724	1,437	3,534	29%
87314	REINFORCING METAL WORKERS	265	274	324	14	96	19	59	22%
34011	REPORTERS & CORRESPONDENTS	393	410	491	31	190	38	98	25%
53805	RESERVATION & TRANSPORTATION TICKET AGENTS	932	1,003	1,301	98	542	111	369	40%
32302	RESPIRATORY THERAPISTS	505	529	652	42	254	54	147	29%
85935	RIGGERS	*	*	*	0	6	1	5	*
92921	ROASTING, BAKING, & DRYING MACH. OPERS., FOOD	91	89	79	2	1-	2	12-	-13%
87908	ROCK SPLITTERS, QUARRY	942	973	1,087	56	282	56	145	15%
91314	ROLLING MACH. SET-UP OPERS. - METAL & PLASTIC	42	44	47	2	9	2	5	12%
87808	ROOFERS	2,016	2,059	2,460	68	580	129	444	22%
87911	ROTARY DRILL OPERATORS, OIL & GAS EXTRACTION	*	*	*	1	7	1	4	*
22132	SAFETY ENGINEERS, EXC. MINING	145	153	200	5	64	9	55	38%
43002	SALES AGENTS & PLACERS, INSURANCE	2,391	2,518	2,950	189	928	183	559	23%
43023	SALES AGENTS, ADVERTISING	438	458	564	33	203	42	126	29%
43008	SALES AGENTS, REAL ESTATE	1,272	1,353	1,566	144	658	128	294	23%
43014	SALES AGTS., SECURITIES/COMMODITIES/FIN. SERV.	1,922	2,007	2,375	147	798	163	453	24%
49002	SALES ENGINEERS	649	684	942	34	327	66	293	45%
49005	SALES REPS., SCIENTIFIC, EXC. RETAIL	1,196	1,271	1,569	81	556	99	373	31%
49014	SALESPERSONS, PARTS	124	133	173	11	69	14	49	40%
49011	SALESPERSONS, RETAIL	23,370	24,699	31,503	2,054	12,265	2,619	8,133	35%
91102	SAWING MACH. TOOL SET-UP OPERS. - MTL. & PLAST.	86	91	103	5	26	3	17	20%
92308	SAWING MACHINE OPERATORS & TENDERS	348	374	475	29	178	34	127	36%
92302	SAWING MACHINE SETTERS & SET-UP OPERATORS	*	*	*	1	12	2	9	*
92524	SCREEN PRINTING MACH. SETTERS & SET UP OPERS.	133	139	209	11	117	24	76	57%
55199	SECRETARIES, OTHER	9,980	10,418	12,196	976	5,253	1,087	2,216	22%
55100	SECRETARIES	11,436	12,089	15,149	1,221	7,263	1,506	3,713	32%
92962	SEPARATING & FILTERING MACHINE OPERATORS	84	82	72	1	3-	1	12-	-14%
87511	SEPTIC TANK SERVICERS & SEWER PIPE CLEANERS	33	37	46	4	17	2	13	39%
97805	SERVICE STATION ATTENDANTS	2,792	2,894	3,305	174	921	185	513	18%
93923	SEWERS, HAND	29	31	38	1	11	1	9	31%
92717	SEWING MACHINE OPERATORS, GARMENT	1,721	1,805	2,013	132	588	111	292	17%
92721	SEWING MACHINE OPERATORS, NON-GARMENT	694	734	910	54	335	65	216	31%
68011	SHAMPOOERS	51	54	71	6	38	8	20	39%
91308	SHEAR/SLITTER MACH. SET-UP OPERS. - METAL & PLAST	100	105	119	6	28	4	19	19%
87805	SHEET METAL DUCT INSTALLERS	*	*	*	0	1	0	1	*
89132	SHEET METAL WORKERS	2,161	2,236	2,671	104	699	140	510	24%
63032	SHERIFFS & DEPUTY SHERIFFS	*	*	*	0	5	0	3	*
89511	SHOE & LEATHER WORKERS & REPAIRERS - PRECISION	52	55	67	2	22	3	15	29%

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		1986	1987	1991	1986-87	1986-91	1990-91	1986-91	
92723	SHOE SEWING MACHINE OPERATORS & TENDERS	*	*	*	1	-4	0	-2	*
85511	SIGNAL OR TRACK SWITCH MAINTAINERS	*	*	*	0	4	0	3	*
89802	SLAUGHTERERS & BUTCHERS	133	129	116	3	2-	3	17-	-13%
85328	SMALL ENGINE SPECIALISTS	115	122	149	7	46	8	34	30%
27308	SOCIAL SERVICE TECHNICIANS	478	508	651	34	228	44	173	36%
68035	SOCIAL WELFARE SERVICE AIDES	368	383	461	31	179	36	93	25%
27305	SOCIAL WORKERS, EXC. MEDICAL & PSYCHIATRIC	463	486	603	39	248	49	140	30%
27302	SOCIAL WORKERS, MEDICAL & PSYCHIATRIC	1,758	1,823	2,128	137	782	159	370	21%
93917	SOLDERERS & BRAZERS	44	48	56	1	16	2	12	27%
91711	SOLDERING & BRAZING MACHINE OPERS. & TENDERS	33	35	41	2	12	1	8	24%
91708	SOLDERING/BRAZING MACH SETTERS & SET-UP OPERS.	*	*	*	0	2	0	2	*
21505	SPECIAL AGENTS, INSURANCE	238	249	293	17	90	17	55	23%
92522	SPECIALITY MATLS. PRINTING MACH. SET-UP OPERS	32	33	50	2	23	4	18	56%
32314	SPEECH PATHOLOGISTS & AUDIOLOGISTS	434	451	525	31	177	35	91	21%
89514	SPOTTERS, DRY CLEANING	62	66	87	6	40	8	25	40%
53126	STATEMENT CLERKS	487	508	601	45	252	52	114	23%
85726	STATION INSTALLERS & REPAIRERS, TELEPHONE	315	326	360	15	67	13	45	14%
95032	STATIONARY ENGINEERS	321	339	397	21	118	20	76	24%
55328	STATISTICAL CLERKS	996	1,035	1,247	81	523	102	251	25%
25312	STATISTICIANS	183	188	217	8	58	9	34	19%
55302	STENOGRAPHERS	700	727	858	53	340	64	158	23%
58023	STOCK CLERKS-STOCKROOM, WAREHOUSE OR STORAGE YARD	7,875	8,278	10,321	571	3,617	740	2,446	31%
49021	STOCK CLERKS, SALES FLOOR	4,890	5,192	6,412	371	1,937	395	1,522	31%
87305	STONE MASONS	89	91	109	4	29	6	20	22%
87814	STRUCTURAL METAL WORKERS	596	617	741	28	203	40	145	24%
32928	SURGICAL TECHNICIANS	445	466	575	35	214	45	130	29%
22311	SURVEYING & MAPPING SCIENTISTS	279	299	387	23	129	26	108	39%
22521	SURVEYING & MAPPING TECHS.	601	639	816	43	266	53	215	36%
57102	SWITCHBOARD OPERATORS	3,425	3,603	4,397	347	2,171	422	972	28%
25102	SYSTEMS ANALYSTS, ELECTRONIC DATA PROCESSING	3,174	3,351	4,080	176	1,064	202	906	29%
97905	TANK CAR & TRUCK LOADERS	*	*	*	0	0	0	0	*
87111	TAPERS	1,216	1,239	1,478	56	443	96	262	22%
21914	TAX EXAMINERS, COLLECTORS, & REVENUE AGENTS	341	350	395	20	118	23	54	16%
21111	TAX PREPARERS	353	376	492	35	212	44	139	39%
97114	TAXI DRIVERS & CHAUFFEURS	225	241	307	23	124	24	82	36%
53905	TEACHER AIDES & ED. ASSISTANTS, CLERICAL	4,517	4,708	5,412	380	1,937	397	895	20%
31314	TEACHERS & INSTRUCTORS, VOC. ED. & TRAINING	311	327	410	27	179	33	99	32%
31120	TEACHERS, COLLEGE - AGRI & NATURAL RESOURCES	66	69	79	4	23	4	13	20%
31121	TEACHERS, COLLEGE - ARCHITECTURE & ENVIRON. DESIG	50	52	60	3	16	3	10	20%
31131	TEACHERS, COLLEGE - BIOLOGICAL SCIENCES	168	174	199	9	47	9	31	18%
31144	TEACHERS, COLLEGE - BUSINESS & COMMERCE TECHNOLOG	214	222	253	15	77	15	39	18%
31132	TEACHERS, COLLEGE - BUSINESS & MANAGEMENT	931	970	1,105	69	342	69	174	19%
31133	TEACHERS, COLLEGE - COMMUNICATIONS	35	37	42	2	10	2	7	20%
31134	TEACHERS, COLLEGE - COMPUTER & INFO. SCIENCES	89	93	106	5	26	5	17	19%
31145	TEACHERS, COLLEGE - DATA PROCESSING TECHNOLOGIES	*	*	*	1	5	1	4	*
31135	TEACHERS, COLLEGE - EDUCATION	930	968	1,103	53	252	50	173	19%
31136	TEACHERS, COLLEGE - ENGINEERING	300	312	356	18	91	18	56	19%
31122	TEACHERS, COLLEGE - FINE & APPLIED ARTS	579	603	687	36	178	36	108	19%
31123	TEACHERS, COLLEGE - FOREIGN LANGUAGES	264	275	313	21	107	22	49	19%

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31146	TEACHERS, COLLEGE - HEALTH & PARAMEDICAL SERVICES	81	84	96	5	25	5	15	19%
31124	TEACHERS, COLLEGE - HEALTH PROFESSIONS	306	319	363	20	97	19	57	19%
31125	TEACHERS, COLLEGE - HOME ECONOMICS	158	164	187	15	76	15	29	18%
31143	TEACHERS, COLLEGE - INTERDISCIPLINARY STUDIES	*	*	*	0	1	0	1	*
31126	TEACHERS, COLLEGE - LAW	47	49	56	4	20	4	9	19%
31127	TEACHERS, COLLEGE - LETTERS	613	638	727	50	248	51	114	19%
31128	TEACHERS, COLLEGE - LIBRARY SCIENCES	68	71	81	5	28	5	13	19%
31129	TEACHERS, COLLEGE - MATHEMATICS	252	263	300	15	72	14	48	19%
31147	TEACHERS, COLLEGE - MECHANICAL & ENGINEER. TECHNO	289	301	342	16	86	16	53	18%
31137	TEACHERS, COLLEGE - MILITARY SCIENCES	*	*	*	0	3	0	2	*
31138	TEACHERS, COLLEGE - PHYSICAL SCIENCES	323	336	383	23	116	23	60	19%
31139	TEACHERS, COLLEGE - PSYCHOLOGY	207	215	245	14	67	13	38	18%
31140	TEACHERS, COLLEGE - PUBLIC AFFAIRS & SERVICES	230	239	272	14	66	13	42	18%
31141	TEACHERS, COLLEGE - SOCIAL SCIENCES	621	647	737	44	218	44	116	19%
31142	TEACHERS, COLLEGE - THEOLOGY	*	*	*	0	5	0	4	*
31325	TEACHERS, ELEMENTARY - ACADEMIC	11,769	12,253	13,962	1,020	5,096	1,049	2,193	19%
31324	TEACHERS, ELEMENTARY - ART	269	280	319	23	116	24	50	19%
31326	TEACHERS, ELEMENTARY - HOME ECONOMICS	181	188	214	15	77	16	33	18%
31327	TEACHERS, ELEMENTARY - MUSIC	525	547	623	45	227	46	98	19%
31328	TEACHERS, ELEMENTARY - PHYSICAL EDUCATION	647	674	768	56	280	57	121	19%
31329	TEACHERS, ELEMENTARY - SPECIAL &/OR EXCEPT. EDUCA	1,886	1,964	2,238	163	817	168	352	19%
31330	TEACHERS, ELEMENTARY - VOCATIONAL	124	129	147	10	53	11	23	19%
31305	TEACHERS, ELEMENTARY SCHOOL	28	30	40	2	19	3	12	43%
31302	TEACHERS, PRESCHOOL & KINDERGARTEN	2,244	2,371	2,970	228	1,302	276	726	32%
31332	TEACHERS, SECONDARY - COMMERCIAL & BUSINESS	504	524	598	36	179	36	94	19%
31333	TEACHERS, SECONDARY - ENGLISH	1,163	1,211	1,380	84	414	84	217	19%
31334	TEACHERS, SECONDARY - FINE ARTS	437	455	518	31	155	31	81	19%
31336	TEACHERS, SECONDARY - FOREIGN LANGUAGES	295	307	350	21	105	21	55	19%
31337	TEACHERS, SECONDARY - HOME ECONOMICS	272	283	323	19	97	19	51	19%
31338	TEACHERS, SECONDARY - INDUSTRIAL ARTS	417	434	495	30	148	30	78	19%
31339	TEACHERS, SECONDARY - MATHEMATICS	721	750	855	52	256	52	134	19%
31335	TEACHERS, SECONDARY - PERFORMING ARTS	102	107	121	7	36	7	19	19%
31340	TEACHERS, SECONDARY - PHYSICAL EDUCATION	590	615	700	42	210	42	110	19%
31341	TEACHERS, SECONDARY - READING	210	219	249	15	74	15	39	19%
31342	TEACHERS, SECONDARY - SCIENCE	605	630	718	43	215	43	113	19%
31343	TEACHERS, SECONDARY - SOCIAL STUDIES	809	842	960	58	288	58	151	19%
31344	TEACHERS, SECONDARY - SPECIAL &/OR EXCEPT LD	572	596	679	41	204	41	107	19%
31345	TEACHERS, SECONDARY - VOCATIONAL TRAINING	192	200	228	13	68	13	36	19%
31331	TEACHERS, SUBSTITUTE	2,903	3,022	3,441	251	1,257	258	541	19%
31505	TECHNICAL ASSISTANTS, LIBRARY	232	240	272	19	110	21	40	17%
34005	TECHNICAL WRITERS	332	352	464	17	146	28	132	40%
57111	TELEGRAPH & TELETYPE OPERATORS	*	*	*	0	4	0	3	*
85702	TELEPHONE & CABLE TV LINE INSTALLERS/REPAIRERS	1,498	1,552	1,741	72	350	67	243	16%
53102	TELLERS	3,844	4,015	4,748	377	2,040	428	904	24%
92714	TEXTILE BLEACHING & DYEING MACH. OPERS. & TENDERS	76	78	87	5	27	5	11	14%
92705	TEXTILE MACH. OPERS. - WINDING/WEAVING/CUTTING	53	56	69	3	24	5	16	30%
92702	TEXTILE MACHINE SETTERS & SET-UP OPERATORS	*	*	*	0	5	0	3	*
85953	TIRE REPAIRERS & CHANGERS	671	699	829	44	256	50	158	24%
28311	TITLE EXAMINERS & ABSTRACTORS	573	598	707	54	298	62	134	23%

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28308	TITLE SEARCHERS	130	136	162	12	68	14	32	25%
89102	TOOL & DIE MAKERS	582	612	769	49	304	58	187	32%
89111	TOOL GRINDERS, FILERS, SHARPENERS (PRECISION)	216	232	288	14	98	16	72	33%
39005	TRAFFIC TECHNICIANS	*	*	*	1	4	1	2	*
58028	TRAFFIC, SHIPPING, & RECEIVING CLERKS	4,876	5,119	6,286	331	2,118	413	1,410	29%
53108	TRANSIT CLERKS	195	203	240	17	93	18	45	23%
15023	TRANSPORT., COMMUN., & UTILITIES OPERATIONS MGRS	*	*	*	0	1	0	1	*
58011	TRANSPORTATION AGENTS	226	244	316	24	132	27	90	40%
43021	TRAVEL AGENTS	1,206	1,298	1,682	134	719	151	476	39%
53802	TRAVEL CLERKS	61	64	82	6	38	7	21	34%
97102	TRUCK DRIVERS, HEAVY OR TRACTOR TRAILER	6,483	6,934	8,569	550	2,723	541	2,086	32%
97105	TRUCK DRIVERS, LIGHT - INCL. DELIVERY & ROUTE	2,838	2,996	3,732	167	1,141	218	894	32%
92541	TYPESETTING & COMPOSING MACH. OPERS. & TENDERS	237	247	302	22	146	28	65	27%
55308	TYPISTS	5,776	6,014	7,094	563	3,263	662	1,318	23%
55311	TYPISTS, WORD PROCESSING EQUIPMENT	1,569	1,653	2,095	105	750	137	526	34%
63026	U.S. MARSHALLS	26	27	31	2	13	2	5	19%
85117	UNDERGROUND MINE MACHINERY MECHANICS	*	*	*	0	0	0	0	*
21102	UNDERWRITERS	1,099	1,160	1,354	102	510	99	255	23%
89508	UPHOLSTERERS	485	528	696	47	306	63	201	41%
27105	URBAN & REGIONAL PLANNERS	322	332	370	11	68	11	48	15%
68021	USHERS, LOBBY ATTENDANTS, & TICKET TAKERS	454	483	628	42	264	54	174	38%
98905	VEHICLE WASHERS & EQUIPMENT CLEANERS	1,828	1,833	2,415	152	869	180	587	32%
32114	VETERINARIANS & VETERINARY INSPECTORS	*	*	*	0	3	0	2	*
31514	VOCATIONAL & EDUCATIONAL COUNSELORS	1,227	1,278	1,485	89	482	94	258	21%
65008	WAITERS & WAITRESSES	17,099	18,328	23,118	2,149	11,301	2,382	6,019	35%
68032	WARDROBE, LOCKER, & DRESSING ROOM ATTENDANTS	144	154	206	12	85	17	62	43%
93117	WATCH/CLOCK/CHRONOMETER ASSEMBLERS & ADJUSTERS	*	*	*	0	4	0	3	*
85917	WATCHMAKERS	41	43	55	3	18	3	14	34%
95002	WATER & LIQUID WASTE TREATMENT PLANT/SYSTEM OPERS	399	409	450	14	77	13	51	13%
58017	WEIGHERS/MEASURERS/CHECKERS - RECORDKEEPING	192	201	253	8	85	18	61	32%
93914	WELDERS & CUTTERS	1,712	1,831	2,125	139	603	104	413	24%
91705	WELDING MACHINE OPERATORS & TENDERS	215	231	269	17	83	12	54	25%
91702	WELDING MACHINE SETTERS & SET-UP OPERATORS	197	209	244	14	68	10	47	24%
53502	WELFARE ELIGIBILITY WORKERS & INTERVIEWERS	320	329	362	21	115	22	42	13%
21302	WHOLESALE & RETAIL BUYERS, EXC. FARM PRODUCTS	1,232	1,296	1,645	104	662	140	413	34%
89308	WOOD MACHINISTS	264	285	340	27	115	20	76	29%
92314	WOODWORKING MACH. OPERS. & TENDERS, EXC. SAWING	303	324	414	26	154	28	111	37%
92311	WOODWORKING MACHINE SET-UP OPERS., EXC. SAWING	181	194	242	16	87	16	61	34%
34002	WRITERS & EDITORS	722	754	941	52	378	73	219	30%
43017	OSALES AGENTS, SELECTED BUSINESS SERVICES	1,578	1,677	2,165	153	941	194	587	37%
	******** COUNTY	834,398		1,078,821		403,774	244,423		
	******** TOTALS		878,115		68,838		82,323		29%

* OCCUPATIONS WITH EMPLOYMENT OF LESS THAN 25

ERIC Clearinghouse for Junior Colleges MAY 8 1987